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Database
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Maximum Match 100%
Listing first 45 summaries
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Maximum DB seq length: 2000000000
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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
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114
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pir3:*
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43.697 Million cell updates/sec
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43.5 38.2 241 2 A5926 43.5 38.2 1651 1 C3N1 43 37.7 198 2 H9011 43 37.7 337 2 T1865 43 37.7 461 2 AH037	.5 39.0 161 2 SA .5 39.0 281 2 SA .5 39.0 669 2 SA 44 38.6 2095 2 SA	48 42.1 282 2 48 42.1 282 2 47 41.2 834 2 46 40.4 1473 2 45.5 39.9 1617 2 45 39.5 159 2	1 109 95.6 1676 1 C5HU 2 94 82.5 74 2 A25408 3 93 81.6 74 2 A01268 4 84 73.7 72 A57689 5 84 73.7 1680 1 C5MS 6 56.5 49.6 1735 2 S54784 7 56.5 49.6 1736 2 A29176 8 56.5 49.6 1738 1 A24558 9 55.5 48.7 76 2 JL0036 10 55.5 48.7 77 2 A01265 11 51.5 45.2 1744 1 C4HU 12 48 42.1 28.2 2 JC5577	Result Query No. Score Match Length DB ID
262 tetras; 0 complem 111 26S pro 154 hypoth 173 cystein	r21013 hypothetical protes S44619 C50C3.9 protein - S73895 hypothetical prote S65551 factor H - bovine AE3441 17K common-antigen S29529 genome polyprotein	p31 prot hypothet ovostattocomplemo conserve	compli	ID Description

45	44	43	42	41	40	39	38	37	36	ა წ	34	ω ω	32	31	30	
41	41	41	41.5	41.5	41.5	42	42	42	42	42.5	42.5	42.5	42.5	43	43	
36.0	36.0	36.0	36.4	36.4	36.4	36.8	36.8	36.8	36.8	37.3	37.3	37.3	37.3	37.7	37.7	
217	208	187	1101	616	312	2149	2092	1068	368	1673	1620	705	685	2543	1645	
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A87990	C96833	T48093	T16840	T32131	T32379	S18676	S30026	S01519	H75412	I50806	151339	S34968	S78040	T31687	AG1897	
protein W05H12.1 [	hypothetical prote	genome polyprotein	genome polyprotein	hypothetical prote	spermidine/putresc	complement compone	complement compone	fibulin, splice fo	fibulin, splice fo	suface antigen - P	two-component hybr					

## ALIGNMENTS

RESULT 1
C5HU
complement C5 precursor [validated] - human
N; Contains: C5a anaphylatoxin; C5b
C; Species: Homo sapiens (man)
C;Date: 30-Sep-1992 #sequence_revision 30-Sep-1992 #text_change 08-Dec-2000
C; Accession: A40075; A27689; A01267; A01266; S15121
R; Haviland, D.L.; Haviland, J.C.; Fleischer, D.T.; Hunt, A.; Wetsel, R.A.
J. Immunol. 146, 362-368, 1991
A; Title: Complete cDNA sequence of human complement pro-C5. Evidence of truncated tra
A; Reference number: A40075; MUID: 91079575; PMID: 1984448
A; Accession: A40075
A; Molecule type: mRNA
A; Residues: 1-1676 < HAV>
A;Cross-references: GB:M57729; NID:g179982; PIDN:AAA51925.1; PID:g179983
A; Note: 518-Ser was also found
R; Wetsel, R.A.; Lemons, R.S.; Le Beau, M.M.; Barnum, S.R.; Noack, D.; Tack, B.F.
Biochemistry 27, 1474-1482, 1988
A; Title: Molecular analysis of human complement component C5: localization of the str
A; Reference number: A27689; MUID: 88209511; PMID: 3365401
A; Accession: A27689

A;Molecule type: mRNA A;Residues: 412-1676 <WET> A;Cross-references: GB:M65134; GB:M18879; NID:g179691; PIDN:AAA51856.1; PID:g179692 R;Fernandez, H.N.; Hugli, T.E. J. Biol. Chem. 253, 6955-6964, 1978

A;Title: Primary Structural analysis of the polypeptide portion of human C5a anaphyla A;Reference number: A01267; MUID:79005687; PMID:690134
A;Reference number: A01267
A;McCession: A01266
A;Residues: 678-751 <FER>
R;Lundwall, A.B.; Wetsel, R.A.; Kristensen, T.; Whitehead, A.S.; Woods, D.E.; Ogden, J. Biol. Chem. 260, 2108-2112, 1985
A;Title: Isolation and sequence analysis of a cDNA clone encoding the fifth complemen A;Reference number: A01266; MUID:85130937; PMID:2579066
A;Accession: A01266
A;McCession: A01266
A;McCessi

C;Comment: Complement C5 contains two disulfide-linked chains, formed by removal of f (beta and alpha' chains).

C;Comment: Activation of C5 initiates the spontaneous assembly of the late complement is the foundation upon which the membrane attack complex is assembled.

C;Comment: C5a has potent spasmogenic and chemotactic activity.

C;Genetics:

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N;Contains: C5a anaphylatoxin; C5b
C:Species: Sus scrofa domestica (domestic pig)
C;Date: 29-Jul-1981 #sequence_revision 15-Oct-1994 #text_change 16-Feb-1997
C;Accession: A01268; A26248
R:Gerard, C.; Hugli, T.E.
J. Biol. Chem. 255, 4710-4715, 1980
A;Title: Amino acid sequence of the anaphylatoxin from the fifth component (A:Reference number: A01268; MUID:80182137; PMID:7372604
                                          A; Molecule type: protein
A; Residues: 1-74 <GER>
R; Gerard, C.; Hugli, T.E
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      C;Superfamily: alpha-2-macroglobulin
C;Keywords: complement alternate pathway; complement pathway; cytolysis;
F;1-74/Product: C5a anaphylatoxin #status experimental <C5T>
F;21-47,22-54,34-55/Disulfide bonds: #status predicted
                                                                                                                                                                                                                                                                                                                                                                        complement C5 - pig (fragment)
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C:Comment: Activation of C5 initiates the spontaneous assembly of the 1s the foundation upon which the membrane attack complex is assembled.

C:Comment: C5a has potent spasmogenic and chemotactic activity.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    R;Gennaro, R.; Simonic, T.; Negri, A.; Mottola, C.; Secchi, C.; Ronchi, S.; Romeo, D. Eur. J. Biochem. 155, 77-86, 1986
A;Title: C5a fragment of bovine complement. Purification, bioassays, amino-acid sequents; Reference number: A25408; MUID:86136134; PMID:3081348
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             F;19-673/Product: complement C5 and C5b beta chain #status predicted <C5BB>
F;678-1676/Product: complement C5 alpha chain #status predicted <C5A>
F;678-751/Product: C5a anaphylatoxin #status experimental <C5T>
F;752-1676/Product: C5b alpha' chain #status predicted <C5BA>
F;752-1676/Product: C5b alpha' chain #status predicted <C5BA>
F;567-810,634-669,698-724,699-731,711-732,866-1527,1101-1159,1375-1505,1405-1474,1520-15F;741/Binding site: carbohydrate (Asn) (covalent) #status experimental
F;751-752/Cleavage site: Aig-Leu (C5 convertase) #status experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Molecule type: protein
A; Residues: 1-74 <GEN>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      C:Species: Bos primigenius taurus (cattle)
C:Date: 02-Jun-1988 #sequence_revision 15-Oct-1994 #text_change 16-Feb-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       complement C5 - bovine (fragment)
N;Contains: C5a anaphylatoxin; C5b
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A; Accession: A25408
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A:Map position: 9934.1 9934.1
C:Superfamily: alpha-2-macroglobulin
C:Keywords: complement alternate pathway; co
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Comment: Complement C5 contains two disulfide-linked chains,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ;Accession: A25408
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          911,1115,1630/Binding site: carbohydrate (Asn) (covalent) #status predicted
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95.0%;
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Pred. No. 1
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1.7e-07;
2;
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N;Contains: C5a anaphyracum, N;Contains: C5a musculus (house mouse)
C;Species: Mus musculus (house mouse)
C;Date: 19-Nov-1988 #sequence_revision
C;Date: 19-Nov-1988 #sequence_revision
A35530; A27538; A40429
                                                                                               complement C5 precursor - mouse N; Contains: C5a anaphylatoxin; C5b
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                                                                                                                                                                                         RESULT
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A; Note: C5a has potent spasmogenic and chemotactic activity C; Superfamily: alpha-2-macroglobulin C; Keywords: complement alternate pathway; complement pathway; F; 1-77/Product: C5a anaphylatoxin #status experimental <C5T>F; 24-50, 25-57, 37-58/Disulfide bonds: #status predicted
                                                                                                                                                                                                                                                                                                                                       A; Description: activation of C5 initiates spontaneous assembly is the foundation for assembly of the membrane attack complex A; Pathway: complement alternate pathway; complement pathway
                                                                                                                                                                                                                                                                                                                                                                                                                                                           A;Molecule type: protein
A;Residues: 1-77 <CUI>
C;Complex: Complement C5 contains two disulfide-linked chains,
(beta and alpha' chains).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            C:Species: Rattus norvegicus (Norway rat)
C:Date: 23-Feb-1996 #sequence_revision 31-Jan-1997 #text_change 16-Feb-1997
C:Accession: A57689
                                                                                                                                                                                                                                                                                                                                                                                                                                       C; Function:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Title: Primary structure and functional characterization of rat C5a: an anaphylatox A: Reference number: A57689; MUID:95078724; PMID:7987212
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            R;Cui, L.; Carney, D.F.; Hugli, T.E.
Protein Sci. 3, 1169-1177, 1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         C:Comment: Complement C5 contains two disulfide-linked chains, formed by removal of f (beta and alpha' chains).

C:Comment: Activation of C5 initiates the spontaneous assembly of the late complement is the foundation upon which the membrane attack complex is assembled.
C:Comment: C5a has potent spasmogenic and chemotactic activity.
C:Superfamily: alpha-2-macroglobulin
C:Keywords: complement alternate pathway; complement pathway; cytolysis; glycoprotein F:1-74/Product: C5a anaphylatoxin #status experimental <C5T>
F:21-47,22-54,34-55/Disulfide bonds: #status experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; Accession: A57689
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          complement C5a - rat (fragment)
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A; Residues: 1-64,'E',66-73 <ZIM>
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Hoppe-Seyler's Z. Physiol. Chem. 365, 151-158, 1984
A;Reference number: A36248; MUID:84184201; PMID:6714942
A;Contents: disulfide bonds
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A:Reference number: A26247; MUID:81199549; PMID:6940191
                                                                                                                                                           Query Match
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Best Local :
24 CCYDGARENKYETCEQRVAR
                                                                                                                                    Local Similarity
                                                  1 CCYDGASVNNDETCEQRAAR 20
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                                                                                                        Conservative
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                                                                                                                                 73.7%;
75.0%;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           81.6%;
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                                                                                                     0;
                                                                                             Score 84; DB 2; L. Pred. No. 6.1e-06;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ν,
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. 2.4e-07;
2;
                                                                                                                                                     Length 77;
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                                                                                                                                                                                                                                                        cytolysis; glycoprotein
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15-Oct-1994 #text\_change 18-Jun-1999

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A: Molecule type: DNA
A: Residues: 1-1735 <OGA>
A: Residues: 1-1735 <OGA>
A: Residues: 1-1735 <OGA>
A: Cross-references: EMBL: M6493; NID: g200988; PIDN: AAA40117.1; PID: g200989
R; Hemenway, C.; Kalff, M.; Stavenhagen, J.; Walthall, D.; Robins, D.
Nucleic Acids Res. 14, 2539-2554, 1986
A; Title: Sequence comparison of alleles of the fourth component of complement (C4)
A: Reference number: I48274; MUID: 86176748; PMID: 3008092
                                                                                                                                                                                                                                                                                                                                                                                                                                                          sex-limited protein Slp(w7) - mouse
C:Species: Mus musculus (house mouse)
C:Date: 27-Oct-1995 #sequence_revision 03-Nov-1995 #text_change 16-Jul-1999
C:Accession: S54784; 148770
C:Accession: S54784; N.E.
R:Ogata, R.T.; Zepf, N.E.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         F:1-18/Domain: signal sequence #status predicted <SIG>
F:19-674,679-1679/Product: complement C5 *status predicted <MAT>
F:19-674,756-1679/Product: C5b *status predicted <C5b>
F:19-674/Product: complement C5 and C5b beta chain *status predicted <F:679-1679/Product: complement C5 and C5b beta chain *status predicted <C5a>
                                                                                                                                                                                                                                                                                                                                    A;Title: The murine Slp gene. Additional evidence that sex-limited A;Reference number: S54784; MUID:92013090; PMID:1918990 A;Accession: S54784
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  F;679-1679/Product: Complement C5 alpha chain #status predicted <C5A>
F;679-755/Product: C5a anaphylatoxin #status predicted <C5T>
F;756-1679/Product: C5b alpha' chain #status predicted <C5BA>
F;567-814,635-670,702-728,703-735,715-736,870-1531,1105-1163,1379-1509,1409-1478,1524-15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A:Introns: 22/3; 86/3; 140/3; 164/3; 195/2; 223/1; 253/2; 291/3; 334/1; 372/3; 434/3; 13; 1224/1; 1292/3; 1343/3; 1364/3; 1392/1; 1411/2; 1445/3; 1470/3; 1506/1; 1534/1; 156/5; Superfamily: Alpha-2-macroglobulin C:Keywords: complement alternate pathway; complement pathway; cytolysis; glycoprotein;
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C;Comment: Activation of C5 initiates the spontaneous assembly of the late complement or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A;Residues: PGL',44-1680 <WET2> R;Haviland, D.L.; Haviland, J.C.; Fleischer, D.T.; Wetsel, J. Biol. Chem. 266, 11818-11825, 1991
                                                                                                                                                                                                                                                                                                   A; Status: preliminary; translation not shown
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A; Residues: 1-15 <HAV>
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A;Reference number: A40429; MUID:91268053; PMID:1711041
A;Accession: A40429
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A; Title: Structure of the murine fifth complement component (C5) gene. A large, highly
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A; Reference number: A27538; MUID:87185363; A; Accession: A27538
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A; Molecule type: mRNA
A; Residues: 1-215, 'L'
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J. Biol. Chem. 265, 2435-2440, 1990
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Comment: C5a has potent spasmogenic and chemotactic activity.
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Best Local
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75.0%;
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Pred. No. 0.00011;
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                                                   A; Molecule type:
A; Residues: 1-21
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A;Cross references: GB:X55495
R;Nonaka, M.; Kimura, H.; Yeul, Y.D.; Yokoyama, S. Proc. Natl. Acad. Sci. U.S.A. 83, 7883-7887, 1986
A;Title: Identification of the 5'-flanking regulation o
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Eur. J. Immunol. 20, 1607-1610, 1990
Eyr. J. Immunol. 20, 1607-1610, 1990
A;Title: C4 from C4-high and C4-low mouse strains have identical sequences A;Reference number: A60227; MUID:90353398; PMID:2387317
A;Accession: B60227
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Proc. Natl. Acad. Sci. U.S.A. 81, 4908-4911, 1984
A;Title: Genes for murine fourth complement component A;Reference number: A41195; MUID:84272739; PMID:6589636
A;Accession: A41195
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A;Title: Isolation of cDNA clones specifying the fourth component of mouse complement A;Reference number: A94013; MUID:85038607; PMID:6208559
A;Accession: B21692
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A; Residues: 1096-1139 < OG3>
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A;Residues: 1345-1438, 'R', 1440-1544 <OG2>
A;Cross-references: GB:K02293; NID:g199611; PIDN:AAA39682.1; PID:g199612
R;Tosi, M.; Levi-Strauss, M.; Duponchel, C.; Meo, T.
Philos. Trans. R. Soc. Lond. 306, 389-394, 1984
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C;Date: 30-Jun-1988 #sequence_revision 30-Jun-1988 #text_change 16-Jul-1999
C;Accession: A29176; B21692; A41195; B29059; B60227; I79467
A; Status: preliminary; translated from GB/EMBL/DDBJ
                                              A; Reference number: I59084; MUID: 87017050; PMID: 3464002
A; Accession: I79467
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A; Residues: 1255-1335, 'G', 1337-1373 <TOS>
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A; Residues: 651-749, 'H', 751-774, 'D', 776-802, 921-1040 <NON>
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A; Residues: 1-1736 < OGA>
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A; Residues: 634-641, 'L', 643-828 < RES>
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ol. 135, 4239-4244,
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Pred. No. 2;
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R;Levi-Strauss, M.; Tosi, M.; Steinmetz, M.; Klein, J.; Meo, T.
Proc. Natl, Acad. Sci. U.S.A. 82, 1746-1750, 1985
A;Title: Multiple duplications of complement C4 gene correlate
A;Reference number: A22039; MUID:85166208; PMID:3856857
A;Accession: A22039
A;Molecule type* mRNA
                                                                                                                                                                                                                                                                            A:Experimental source: strain B10.BR R:Ogata, R.T.; Zepf, N.E. Bur. J. Immunol. 20, 1607-1610, 1990 A:Title: C4 from C4-high and C4-low mouse strains have A:Reference number: A60227; MUID:90353398; PMID:2387317
                                                                                                                                                                                                        A; Molecule type: DNA
A; Residues: 1099-1142 <OGA>
                                                                                                                                                                                                                                                                                                                                                                                                                 A;Molecule type: DNA
A;Residues: 961-1205, 'Q',1207-1290 <TAI>
A;Cross-references: GB:M23186; NID:g340821;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         R;Taillon-Miller, P.A.; Shreffler, D.C.
J. Immunol. 141, 2382-2387, 1988
A;Title: Structural basis for the C4d.1/C4d.2
A;Reference number: A30520; MUID:89009745; PMI
A;Accession: A30520
                                                                                                                                                                    A;Cross-references: GB:X55493; NID:g287729; PIDN:CAA39112.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Proc. Natl. Acad. Sci. U.S.A. 81, 6822-6826, 1984
A;Title: Isolation of cDNA clones specifying the fourth A;Reference number: A94013; MUID:85038607; PMID:6208559
A;McCession: A21692
                                                                                                                                                                                                                                                                    A; Accession: A60227
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A;Molecule type: mRNA
A;Residues: 651-719,'G',721-738,'AI',741-805 <NO2>
A;Cross-references: GB:M12970
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A;Residues: 1-131,'Y',133-326,'E',328-569,'E',571-1323,'N',1325-1441,'K',1443-1452,'V'
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A;Cross-references: GB:M11729; NID:g199080; PIDN:AAA39506.1; EA;Cross-references: GB:M11729; NID:g199080; PIDN:AAA39506.1; EA;Cross-references: Strain B10.WR
R;Nonaka, M.; Nakayama, K.; Yeul, Y.D.; Takahashi, M.
J. Biol. Chem. 260, 10936-10943, 1985
A;Title: Complete nucleotide and derived amino acid sequences A;Reference number: A25371; MUID:85289294; PMID:2993295
A;Accession: A25371
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Experimental source: strain FM
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C;Date: 31-Mar-1989 #sequence_revision 11-Nov-1994 #text_change 18-Jun-1999
C;Accession: A24558; A25371; A21622; A5520; A60227; A22039; A29059; A01264;
R;Sepich, D.S.; Noonan, D.J.; Ogata, R.T.
Proc. Natl. Acad. Sci. U.S.A. 82, 5895-5899, 1985
A;Title: Complete cDNA sequence of the fourth component of murine complement.
A;Reference number: A24558; MUID:85298264; PMID:3862104
A;Accession: A24558
A;MOIEcule type: mRNA
A;Bolecule type: mRNA
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C; Species: N
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N;Contains: classical-complement-pathway C3/C5 convertase (EC 3.4.21.43) C4b
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C;Genetics:
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A:Note: the list of introns is incomp
C:Superfamily: alpha-2-macroglobulin
C:Keywords: acute phase; complement
                                                                                                                                ay C5 convertase.
C:Comment: C4a anaphylatoxin is a vasoactive C:Comment: The activity of C4b is regulated
                                                                                         A; Introns: 22/2; 86/3; 977/3;
                                                                                                                        C; Genetics:
                                                                                                                                                                                                                                                                                                      C; Comment: This protein is synthesized
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Immunol. Rev. 87, 81-99, 1985
A;Title: Molecular cloning and characterization of complementary and A;Reference number: I54567; MUID:86031969; PMID:2997024
A;Accession: I54567
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A; Molecule type: mRNA
A; Residues: 591-603, 'M', 605-1323, 'N', 1325-1452, 'V', 1454-1585, 'Q', 1587-1738
A; Cross references: EMBL: X05314; NID: g50241; PIDN: CAA28936.1; PID: g50242
R; Nonaka, M.; Nakayama, K.; Yeul, Y.D.; Shimizu, A.; Takahashi, M.
Immunol. Rev. 87, 81-99, 1985
                                                                                                                                                                                                                                                                                        by disulfide bonds
                                                                                                                                                                                                                                                                                                                         A;Cross-references: GB:M12969; NID:g199268; PIDN:AAA39559.1; PID:g387439
                                                                                                                                                                                                                                                                                                                                                                 A; Molecule type: DNA
A; Residues: 1724-1738 <RE4>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A;Cross-references: GB:M12968; NID:g199267; PIDN:AAA39558.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A; Molecule type: DNA
A; Residues: 1-128 <RE3>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         R;Hemenway, C.; Kalff, M.; Stavenhagen, J.; Walthall, D.; Robins, D. Nucleic Acids Res. 14, 2539-2554, 1986
A;Title: Sequence comparison of alleles of the fourth component of complement A;Reference number: I48274; MUID:86176748; PMID:3008092
A;Accession: I48274
                                                                                                                                                                                                            \mathbb{C}; Comment: The activation of complement C4 by complement subcomponent C1s releases the complement factor 2 to form the classical-complement-pathway C3 convertase. The C
                                                                                                                                                                                                                                                                                                                                                                                                                      A; Status: preliminary; translated
                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Accession: I69023
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Proc. Natl. Acad. Sci. U.S.A. 81, 4908-4911, 1984
A;Title: Genes for murine fourth complement component (C4) and sex-limited
A;Reference number: A41195; MUID:84272739; PMID:6589636
A;Accession: B41195
A;Molecule type: mRNA
A;Residues: 1360-1400, 'S',1402-1511 <0G3>
A;Cross-references: GB:K00019; NID:9199259; PIDN:AAA39554.1; PID:9554209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A;Cross-references: GB:M14225; NID:g199291;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A; Molecule type: DNA
A; Residues: 1-21 < RES>
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A;Accession: 159084
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A; Cross-references: GB: K00019; NID: g199259;
A; Experimental source: strain B10.W7R
R; Ogata, R.T. Sepich, D.S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                R:Ogata, R.T.; Shreffler, D.C.; Sepich, D.S.; Lilly, S.P. Proc. Natl. Acad. Sci. U.S.A. 80, 5061-5065, 1983
A;Title: cDNA clone spanning the alpha-gamma subunit junction A;Reference number: A01264; MUID:83273751; PMID:6192448
A;Accession: A01264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A; Molecule type: mRNA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    R;Tosi, M.; Levi-
Philos. Trans. R.
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complement classical pathway; glycoprotein;
                                                                           1047/3; 1073/3; 1125/3; 1164/3; 1221/3
                                                          incomplete
                                                                                                                                   vasoactive peptide and a regulated by proteolytic
                                                                                                                                                                                                                                                                                                                                                                                                                from GB/EMBL/DDBJ
                                                                                                                                                                                                                                                                                                         as
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                                                                                                                                                                                                                                                                                                single-chain
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PIDN:AAA39554.1; PID:g554209
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                                                                                                                                                                                                                                                                                                      precursor
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                                                                                                                           mediator of inflammation. cleavage involving C4b-bj
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                                                                                                                                involving C4b-bin
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hydrolase;

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                                                                                                                                                                                                                                                                                                                                                    A;Title: Primary structure of bovine complement activation A;Reference number: A01265; MUID:83126436; PMID:6760852 A;Accession: A01265
                                                                                                                                                                                                                                                                                                                                                                                                                                                 C:Accession: A01265
R:Smith, M.A.: Gerr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   C;Species: Bos primigenius taurus (cattle)
C;Date: 13-Jun-1983 #sequence_revision 15-Oct-1994 #text_change 16-Feb-1997
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C;Keywords: complement classical pathway; glycoprotein
F;66/Binding site: carbohydrate (Asn) (covalent) #status experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          R;Cui, L.; Ferreri, K.; Hugli, T.E.
MOl. Immunol. 25, 663-671, 1988
A;Title: Structural characterization of the C4a anaphylatoxin from rat.
A;Reference number: JL0036; MUID:88334568; PMID:3262196
A;Accession: JL0036
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F;1448-1738/Product: complement C4 gamma chain #status predicted <GAM>
F;244,743,1387/Binding site: carbohydrate (Asn) (covalent) #status pred
F;753-754/Cleavage site: Arg-Asn (complement subcomponent C1s) #status
F;1006-1009/Cross-link: thiolester (Cys-Gln) #status predicted
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F;20-673/Product: complement C4 beta chain #status predicted <BET>
F;20-673,754-1440,1448-1738/Product: complement C4b #status predicted
F;678-1440/Product: complement C4 alpha chain #status predicted <ALP>
F;678-1440/Product: complement C4 alpha chain #status predicted <ALP>
F;678-753/Product: C4a anaphylatoxin #status predicted <C4A>
F;754-643/Region: C4b-binding protein binding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                N; Contains:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    complement C4 - bovine (fragment)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               complement C4a anaphylatoxin - rat
C;Species: Rattus norvegicus (Norway rat)
C;Date: 31-Dec-1991 #sequence_revision 31
C;Accession: JL0036
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                                                                                                                                                                        Query Match
Best Local
                                                                                                                                                                                                                            Keywords: complement pathway; glycoprotein; hydrolase; inflammation; i-77/Product: C4a anaphylatoxin #status experimental <C4T>
                                                                                                                                                                                                                                                                               Superfamily: alpha-2-macroglobulin
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                                              CCQDGLTRLPMARTCEQRAAR 43
                                                                                            CCYDGAS-VNNDETCEQRAAR 20
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                                                                                                                                                               48.78; 57.18;
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                                                                                                                                                               Score 55.5;
Pred. No. 0
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Pred. No. 2;
                                                                                                                                         Mismatches
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                                                                                                                                                               0.15;
                                                                                                                                                                                  DB 2;
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                                                                                                                                                                                                                                                  plasma; serine
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A;Molecule type: protein
A;Residues: 957-1012,'E',1014-1108,'I',1110-1175,'S',1177-1270,'V',1272-1336 <CHA>
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A;Title: The chemical structure of the C4d fragment of the human complement component A;Reference number: A32335; MUID:88094444; PMID:3696167
A;Accession: A32335
                                                                              A; Molecule type: protein
A; Residues: 957-1012, 'E', 1014-1044 <CAM>
A; Residues: 957-1012, 'E', 1014-1044 <CAM>
MOL. Immunol. 24, 1187-1197, 1987
                                                                                                                                                                                                                              A;Title: Amino acid sequence around the thiol and reactive acyl groups of human compl A;Reference number: A17265; MUID:82182029; PMID:6978711 A;Accession: A17265
                                                                                                                                                                                                                                                                                                            A; Molecule type: protein
A; Residues: 757, 'X', 759-771; 980-990 <HES>
R; Campbell, R.D.; Gagnon, J.; Porter, R.R
Biochem. J. 199, 359-370, 1981
                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Title: Complete primary structure of human C4a anaphylatoxin. A; Reference number: A92337; MUID:81264286; PMID:6167582 A; Accession: A92337
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A; Residues: 1195-1285; S',1287-1294 <CAR>
A; Cross-references: GB: V00502; GB: J00080; NID: g30010; PIDN: CAA23760.1; PID: g1335030
R; MOON, K.E.; GOTSK1, J.P.; Hugl1, T.E.
J. Biol. Chem. 256, 8685-8692, 1981
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   R;Carroll, M.C.; Porter, R.R.
Proc. Natl. Acad. Sci. U.S.A. 80, 264-267, 1983
A;Title: Cloning of a human complement component C4 general A;Reference number: A19311; MUID:83117835; PMID:6572000
A;Accession: A19311
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C;Date: 25-Feb-1985 #sequence_revision 23-Aug-1996 #text_change 08-Dec-2000
C;Accession: I56095; A29177; B29177; A90845; A19311; A92337; S12866; A17265
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A;Residues: 20-346,'S',348-417,'A',419-725,'P',727-1200,'S',1202-1285,'S',1287-1418,1
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A; Residues: 1056-1225 <BE3>
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A; Residues: 1-22 <BEL>
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                                                                                                                       R.D.; Porter,
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p19 protein - beet necrotic yellow vein mosaic virus (strain G1) C:Species: beet necrotic yellow vein mosaic virus (c:Date: 28-Apr-1993 #sequence_revision 28-Apr-1993 #text_change 08-Apr-1994 C:Accession: D44503
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             F;20-675/Product: complement C4 beta chain #status predicted <BET>
F;20-675,757-1446,1454-1744/Product: C4b #status predicted <C4B>
F;80-675,757-1446,1454-1744/Product: C4b #status predicted <C4B>
F;808-1346/Product: complement C4 alpha chain #status predicted <ALP>
F;680-756/Product: C4a anaphylatoxin #status experimental <C4A>
F;757-845/Region: C4b-binding protein binding
F;957-1336/Product: C4b-binding protein binding
F;957-1336/Product: complement #status experimental <C4D>
F;1654-1744/Product: complement C4 gamma chain #status predicted <GAM>
F;165-75/Cleavage site: Arg-Ala (complement subcomponent C1s) #status
F;1010-1013/Cross-link: thiolester (Cys-GID) #status experimental
                                                                                              R; Bouzoubaa, S.;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     F;1328/Binding site: carbohydrate (Asn) (covalent) #status experimental
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A;Cross-references: GDB:119732; OMIM:120810

A;Map position: 6p21.3-6p21.3

A;Introns: 22/2; 8B/3; 156/1; 179/3; 209/2; 237/1; 269/2; 304/3; 349/1; 387/3; 447/3; 50

3; 1226/1; 1303/3; 1359/3; 1379/3; 1411/1; 1473/2; 1503/3; 1528/3; 1563/1; 1593/1; 1626/
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A; Residues: 1-21 <RE3>
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A;Title: Use of a cDNA clone for the fourth component of human complement (C4)
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A; Residues: 1448-1474 <RE2>
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                            Gen. Virol. 66, ]
Title: Nucleotide
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                                                        .; Guilley, H.; Jonard, G.; Richards, K.; Putz, C. 66, 1553-1564, 1985
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sequence analysis of RNA-3 and RNA-4 of beet necrotic yellow vein
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52.48;
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Pred. No. 1:
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hypothetical 94K protein - rice stripe virus
C;Species: rice stripe virus
C;Date: 31-Dec-1993 #sequence_revision 31-De
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                                                                                                                                                                                                                                                                                                                                                                                                                                              A;Title: Nucleotide sequence analysis of RNA-3 and RNA-4 of beet necrotic yellow vein A;Reference number: A44503
A;Accession: C44503
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            p31 protein - beet necrotic yellow vein mosaic virus (strain F2) (Species: beet necrotic yellow vein mosaic virus (Species: beet necrotic yellow vein mosaic virus (C) pate: 28-Apr-1993 #sequence_revision 28-Apr-1993 #text_change
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A; Residues: 1-282 <BOU>
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R;Bouzoubaa, S.; Guilley, H.; Jonard, G.; Richards, K.; Putz, C.
J. Gen. Virol. 66, 1553-1564, 1985
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A:Title: cDNA clonding, sequence analysis and expression A:Reference number: JC5677
A:Accession: JC5677
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A; Residues: 1-282 < YUA>
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A; Residues: 1-135 <BOU>
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A;Accession: D44503
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Best Local
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Status: preliminary
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                                                                                                                                                      . 115 CYSGVDVLSDELCE
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Similarity 57.18;
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57.18;
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31-Dec-1993 #text\_change 20-Jun-2000

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C:Accession: JQ1965
R:Takahashi, M.; Toriyama, S.; Hamamatsu, C.; Ishihama, A.
J. Gen. Virol. 74, 769-773, 1993
A:Title: Nucleotide sequence and possible ambisense coding strategy of rice stripe virus A:Reference number: JQ1964; MUID:93224901; PMID:8468559
A:Rolecule type: genomic RNA
A:Residues: 1-834 <TAK>
A:Cross:on: JQ1965
A:ROlecule type: genomic RNA
A:Residues: 1-834 <TAK>
A:Cross-references: DDBJ:DJ3176; NID:9536885; PIDN:BAA02470.1; PID:g119491
C:Superfamily: rice stripe virus hypothetical 94K protein
Query Match
Query Match
Best Local Similarity 69.2%; Score 47; DB 2; Length 834;
Best Local Similarity 69.2%; Pred. No. 29;
Matches 9; Conservative 1; Mismatches 3; Indels 0; Gaps 0;
Matches 9; Conservative 1; Mismatches 3; Indels 0; Gaps 0;
Search completed: May 1, 2003, 22:20:06
Job time: 46 secs
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GenCore version 5.1.4\_p5\_4578 Copyright (c) 1993 - 2003 Compugen Ltd.

OM protein - protein search, using sw model

May 1, 2003, 22:09:31; Search time 11 Seconds (without alignments) 75.412 Million cell updates/sec

Title: Perfect score: Sequence: US-09-651-685A-5 114

1 CCYDGASVNNDETCEQRAAR 20

Scoring table: BLOSUM62 Gapop 10.0 , Gapext 0.5

Searched: 112892 seqs, 41476328 residues

Total number of hits satisfying chosen parameters: 112892

Minimum DB seq length: 0 Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

Database : SwissProt\_40:\*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

#### SUMMARIES

Score	Query Match		80	ID	Description
109	5	16	_	CO5_HUMAN	P01031 homo sapien
94	2	7	ш	COSA_BOVIN	82 bos tau
93	1.	74	۲	CO5A_PIG	2 sus s
84	ω	76	<u> </u>	COSA_RAT	50 rattu
æ	w.	1680	<u> </u>	NOUS	684 mus mu
9	9	1738	Ь	NOUS	029 mus
ŭ	8	76	<u>_</u>	CO4A_RAT	9 ratt
ŭ	8	920	ب		bos ta
Ë	5	1744	<u>سا</u>	CO4_HUMAN	homo
48	2	282	ب	Y32K_BNYVG	beet
46	0	1473	Ц	OVOS_CHICK	
4	9.	281	ب	Y125_MYCPN	mycopl
4	9.	685	ب	CFAH_BOVIN	
44.5	9.	1205	ᆫ	YLJ9_CAEEL	P34372 caenorhabdi
44		715	ш	S141_HUMAN	
4		2095	بر	RRPL_TOSV	tosc
		1651	ш	CO3_NAJNA	Q01833 naja naja (
43	.7	337	ب	DNJ2_CAEEL	caen
4	7.	461	Ļ	SYC_YERPE	Q8zcc0 yersinia pe
N	.7	705	ב	FBL1_MOUSE	mus muscu
N	7.	1640	Ц	CO3_ONCMY	
2	.7	1673		CO3_LAMJA	
42	6.	241	Н	TSN1_HUMAN	O60635 homo sapien
42		261	ب	RFA4_HUMAN	homo
42		760	ب	AD25_MOUSE	mus m
42	6.	1068	_	YCFO_MARPO	
•	6	2149	ب	RRPL_RVFVZ	rift valle
ï	6.	65	ب	MT_PARLI	parac
Ë	6	486	<u>, , , , , , , , , , , , , , , , , , , </u>		homo
41		332	ب		zea n
41	٥.	450	ب	VD10_BPT5	bacteriop
41	٥.	491	<u>, , , , , , , , , , , , , , , , , , , </u>	YOB4_MYCTU	
41		1826	<b>ب</b>	SUIS_RABIT	7768
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## ALIGNMENTS

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Genew; 120900;
                            InterPro;
InterPro;
              InterPro;
                                                                                                                                                                                                      EMBL; M57729; AAA51925.1; -. EMBL; M65134; AAA51856.1; -.
                                                                                                                                                                                                                                               use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
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                                                                 Interpro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STRUCTURE BY NMR OF C5A.
MEDLINE=97332508; PubMed=9188742;
Zhang X., Boyar W., Toth M.J., Wennogle L., Gonnella N.C.;
"Structural definition of the C5a C terminus by two-dimensional
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DUCLEAR MAGNETIC RESONANCE SPECIFICACION.

PROTEINS 28:261-267(1997).

PROTEINS 28:261-267(1997).

PROTEINS 28:261-267(1997).

PROTEINS 28:261-267(1997).

PROTEINS 28:261-267(1997).

PROTEINS 28:261-267(1997).

PROTEINS PROTEINS THE SOUNDATION UPON WHICH THE LY

COMPLEX IS ASSEMBLED.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Zhang X., Boyar W., Galakatos N., Gonnella N.C.; "Solution structure of a unique C5a semi-synthetic antagonist: implications in receptor binding."; Protein Sci. 6:65-72(1997).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STRUCTURE BY NMR OF C5A. MEDLINE=97160477; PubMed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Zuiderweg E.R.P., Fesik S.W., "Heteronuclear three-dimensional NMR spectroscopy of the protein C5a.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MEDLINE-89207527; PubMed-2784981; Zuiderweg E.R., Nettesheim D.G., Mollison K.W., Carter G.W., "Terttary structure of human complement component C5a in solution from nuclear magnetic resonance data.", psiochemistry 28:172-185(1989).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Biochemistry 28:2387-2391(1989).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MEDLINE=89274164;
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Biochemistry
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                                                                                                                                   : A40075; C5HU.
: S15121; S15121.
: 1KJS; 15-MAY-97.
: 1CFA; 17-SEP-97.
                                                                                                                                                                                                                                                                                                                                                                                    SIMILARITY: TO C3, C4 AND ALPHA-2-MACROGLOBULIN.
SIMILARITY: CONTAINS 1 ANAPHYLATOXIN-LIKE DOMAIN.
CAUTION: REF. 3 SEQUENCE DIFFERS FROM THAT SHOWN FROM
ONWARD DUE TO THE PRESENCE OF AN ALU REPEAT.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FUNCTION: DERIVED FROM PROTEOLYTIC DEGRADATION OF COMPLEMENT C5, C5 ANAPHYLATOXIN IS A MEDIATOR OF LOCAL INFLAMMATORY PROCESS. IT INDICES THE CONTRACTION OF SMOOTH MUSCLE, INCREASES VASCULAR PERMEABILITY AND CAUSES HISTAMINE RELEASE FROM MAST CELLS AND BASOPHILIC LEUKOCYTES. C5A ALSO STIMULATES THE LOCOMOTION OF POLYMORPHONUCLEAR LEUKOCYTES (CHEMOKINESIS) AND DIRECT THEIR MIGRATION TOWARD SITES OF INFLAMMATION (CHEMOTAXIS).

SUBUNIT: C5 PRECURSOR IS FIRST PROCESSED BY THE REMOVAL OF 4 BASIC RESIDUES, FORMING TWO CHAINS, BETA & ALPHA, LINKED BY A DISULFIDE BOND. C5 CONVERTASE ACTIVATES C5 BY CLEAVING THE ALPHA CHAIN, FURNISH C5A ANAPHYLATOXIN & GENERATING C5B (BETA CHAIN + ALPHA)
                                                                                                                      HGNC:1331; C5
; IPR002890; A2M_N.
; IPR000020; Anaphylatoxin.
; IPR001840; Anaphylatoxn.
; IPR001599; MacrogloblnA2.
; IPR001134; Netrin_C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            protein C5a.";
27:3568-3580(1988).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PubMed=9007977;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PubMed=2730871;
                                                                                                                                                                                                                                                                                                                                                                                                                    POSITION
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C5-C9,
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ACCCCCRTTARRY
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CO5A_BOVIN
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STRUCTURE BY NMR.

STRUCTURE BY NMR.

MEDLINE-89005703; PubMed=3262536;

Zarbock J., Gennarc R., Romeo D., Clore G.M., Gronenborn A.M.;

"A proton nuclear magnetic resonance study of the conformation of bovine anaphylatoxin C5a in solution.",

FEBS Lett. 238:289-294(1988).

-!- FUNCTION: DERIVED FROM PROTECLYTIC DEGRADATION OF COMPLEMENT C5,

C5 ANAPHYLATOXIN IS A MEDIATOR OF LOCAL INFLAMMATORY PROCESS. IT INDUCES THE CONTRACTION OF SMOOTH MUSCLE, INCREASES VASCULAR PERMEABILITY AND CAUSES HISTAMINE RELEASE FROM MAST CELLS AND
                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local (
                                                                                                                                  "C5a fragment of bovine complement. Purification, a amino-acid sequence and other structural studies.", Eur. J. Biochem. 155:77-86(1986).
                                                                                                                                                                                                                                     Mammalia;
Bovidae; B
                                                                                                                                                                        Komeo
                                                                                                                                                                                  Gennaro
                                                                                                                                                                                        MEDLINE=86136134; PubMed=3081348;
                                                                                                                                                                                                                                                                                                  01-OCT-1989 (Rel.
01-OCT-1989 (Rel.
01-FEB-1996 (Rel.
                                                                                                                                                                                                        SEQUENCE
                                                                                                                                                                                                                                                         Eukaryota;
                                                                                                                                                                                                                                                                  Bos taurus (Bovine).
                                                                                                                                                                                                                                                                                       Complement C5A anaphylatoxin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CHAIN
DOMAIN
DISULFID
DISULFID
DISULFID
CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                  P12082;
                                                                                                                                                                                                                                                                                                                                             COSA_BOVIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CHAIN
PEPTIDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Signal;
SIGNAL
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                                                                                                                                                                                                                                                                                                                                                                                              698 CCYDGACVNNDETCEQRAAR 717
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CHAIN
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRINTS; PRO0004; ANAPHYLATOXN.
Prodom; PD003264; Anaphylatoxin; 1.
SMART; SM00104; ANATO; 1.
PROSITE; PS00477; ALPHA_2_MACROGLOBULIN; FALSE_NEG_PROSITE; PS01177; ANAPHYLATOXIN_1; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PROPEP
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                                                                                                                                                                                                                                                                                                                                                                                                            1 CCYDGASVNNDETCEQRAAR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ); PF00207; A2M; 1.
); PF01759; NTR; 1.
); PF01821; ANATO; 1.
); PF01835; A2M_N; 1.
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                                                                                                                                                                                                                                    Bovinae; Bos.
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Similarity
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Membrane attack
                                                                                                                                                                                                                                       ; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea
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                                                                                                                                                                                 Simonic
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12, Last sequence update)
33, Last annotation update)
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95.0%;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        complex; Cytolysis;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMPLEMENT C5
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                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                             Mottola C.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               87DCAA65FF977D19
                                                                                                                                                                                                                                                                                                                                                                                                                                                  No.
                                                                                                                                                                                                                                          Ruminantia; Pecora; Bovoidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                  ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                .5e-09;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     pathway; Glycoprotein;
is; Inflammatory response;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BETA CHAIN
                                                                                                                                                                             Secchi C.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 1676;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CRC64;
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COSA_PIG
COSA_PIG
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AC P010
DT 21-J
COME
COME
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RN (21)
RP SEQU
RX GERIA
RT POTC
RL J. E
RN [2]
RP ACTI
RP ACTI
RA GERIA
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Best Local
"Identification of classical anaphylatoxin as the d
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DISULFID
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CO5A_PIG
P01032;
                                                                                                                                                                      MEDLINE-90248365; PubMed-2337573; Williamson M.P., Madison V.S.;
                                                                                                                                                                                                                                                           C5a molecule: evidence of a modulator role for thunit in human des-Arg74-C5a.";
Proc. Natl. Acad. Sci. U.S.A. 78:1833-1837(1981).
                                                                                                                                                                                                                                                                                                                                                                                                                                               Gerard C., Hugli T.E.;
"Amino acid sequence of the anaphylatoxin from the fifth component porcine complement.";
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21-JUL-1986 (Rel.
01-FEB-1996 (Rel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PROSITE; PS00477; ALPHA_2_MACROGLOBULIN; PROSITE; PS01177; ANAPHYLATOXIN_1; 1. PROSITE; PS01178; ANAPHYLATOXIN_2; 1. Complement pathway; Complement alternate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRINTS: PR00004; ANAPHYLATOXN.
ProDom; PD003264; Anaphylatoxin; 1.
SMART; SM00104; ANATO; 1.
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HSSP; P01032; 1C5A.
                                                                                                                                                                                                                         STRUCTURE
                                                                                                                                                                                                                                                                                                                                                                      MEDLINE=81199549; PubMed=6940191;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Eukaryota; Metazoa;
Mammalia; Eutheria;
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InterPro; IPR001840; Anaphylatoxn.
InterPro; IPR001599; Macroglobina2.
Pfam; PF01821; ANATO; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NCBI_TaxID-9823;
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                                                                                                                                                                                                                                                                                                                                                                                            ACTIVE REGION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MEDLINE=80182137; PubMed=7372604;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE
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SIMILARITY: CONTAINS 1 ANAPHYLATOXIN-LIKE DOMAIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CCYDGAHRNDDETCEERAAR
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21 55
21 47
21 47
34 55
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01, Last sequence update)
33, Last annotation updat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8517 MW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Chordata; Craniata; Vertebrata; Cetartiodactyla; Suina; Suidae;
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BY SIMILARITY.
BY SIMILARITY.
BY SIMILARITY.
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2; Mismatches
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3.3e-08;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 74;
                                                                                                                                                                                                                                                                                                   des-Arg form of
e oligosaccharide
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0;
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RESULT 4
CO5A_RAT
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                                                                                                                                                                                                                                                                                                                   P08650;
01-AUG-1988 (Rel. 08, Created)
01-AUG-1988 (Rel. 08, Last sequence up
01-FEB-1996 (Rel. 33, Last annotation
             PRINTS;
                        Pfam; PF01821; ANATO;
                                              InterPro; IPR000020; InterPro; IPR001840;
                                                                       -!- SIMILARITY: CONTAINS HSSP; P01031; 1KJS.
                                                                                                                                                                     Complement 2:18-19(1985).
-!- FUNCTION: DERIVED FROM PROTEOLYTIC DEGRADATION OF COMPLEMENT
                                                                                                                                                                                           Cui L.-X., Ferreri K., Hugli T.E., "Characterization of rat C5a, a un
                                                                                                                                                                                                                      SEQUENCE.
                                                                                                                                                                                                                                                       Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                       Complement C5A anaphylatoxin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE
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TURN
HELIX
HELIX
HELIX
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PROSITE; PS01178; ANAPHYLATOXIN_2; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRINTS; PRO0004; ANAPHYLATOXN.
ProDom; PD003264; Anaphylatoxin; 1.
SMART; SM00104; ANATO; 1.
                                                                                                                                                                                                                                            NCBI_TaxID=10116;
                                                                                                                                                                                                                                                                                Rattus norvegicus (Rat).
                                                                                                                                                                                                                                                                                                                                                                    CO5A_RAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TURN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DOMAIN
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                                    InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Pfam; PF01821; ANATO;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  InterPro; IPR001599;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PDB; 1C5A; 15-OCT-91.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                InterPro; IPR001840;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PIR; A01268;
                                                                                                                                                                                                                                                                                                                                                                                                                                 21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Local
                                                                                                                                                                                                                                                                                                                                                                                                                                           1 CCYDGASVNNDETCEQRAAR 20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              POLYMORPHONUCLEAR LEUKOCYTES (CHEMOKINESIS) AND DIRECT MIGRATION TOWARD SITES OF INFLAMMATION (CHEMOTAXIS). SIMILARITY: CONTAINS 1 ANAPHYLATOXIN-LIKE DOMAIN.
                                                                                            C5 ANAPHYLATOXIN IS A MEDIATOR OF LOCAL INFLAMMATORY PROCESS. INDUCES THE CONTRACTION OF SMOOTH MUSCLE, INCREASES VASCULAR PERMEABILITY AND CAUSES HISTAMINE RELEASE FROM MAST CELLS AND BASOPHILIC LEUKOCYTES. C5A ALSO STIMULATES THE LOCOMOTION OF POLYMORPHONUCLEAR LEUKOCYTES (CHEMOKINESIS) AND DIRECT THEIR MIGRATION TOWARD SITES OF INFLAMMATION (CHEMOTAXIS).
                                                                                                                                                                                                                                                                                                                                                                                                                                 CCYDGAYRNDDETCEERAAR 40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               l Similarity
16; Conser
PD003264; Anaphylatoxin; 1.
             PR00004;
                                    IPR001599;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               74 AA;
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21 55
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72 74
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                                                                                                                                                                                                                                                                                                                                                                    STANDARD;
            ANAPHYLATOXN
                                                                                                                                                                                                                                                          Rodentia;
                                                                                                                                                                                                                                                                  Chordata;
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14
26
40
62
                                    MacrogloblnA2
                                                          Anaphylatoxin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         81.6%;
                                                 Anaphylatoxn
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MW;
                                                                                   1 ANAPHYLATOXIN-LIKE DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Pred. No. 4.8e-08;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               11AAF2E94A026EB3 CRC64;
                                                                                                                                                                                                                                                       Craniata; Vertebrata; Euteleostomi; Sciurognathi; Muridae; Murinae; Rat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 93;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ARE REQUIRED FOR 90% OF C5A ACTIVITY (ALTHOUGH ARG-74 IS NOT ESSENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ANAPHYLATOXIN-LIKE
                                                                                                                                                                                                                                                                                                                                                                    PRT;
                                                                                                                                                                                           uniquely active spasmogen.";
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                                                                                                                                                                                                                                                                                                                                                                    76
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 1;
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                                                                                                                                                                                                                                                       Murinae; Rattus
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The second contrary was a supply of the second contrary was a supp
                                                                                                                                                                                                                                RA WETSEL R.A., Ogata R.T., Tack B.F.,

RI "Primary structure of the fifth component of murine complement.";

RL Biochemistry 26:737-743(1987).

CC -: FUNCTION: ACTIVATION OF C5 BY A C5 CONVERTASE INITIATES THE SPONTANEOUS ASSEMBLY OF THE LATE COMPLEMENT COMPONENTS, C5-C9,

CC -: FUNCTION: ACTIVATION OF C5 BY A C5 CONVENTANT BINDING SITE CC COMPLEX IS ASSEMBLY OF THE LATE COMPLEX C5B HAS A TRANSIENT BINDING SITE CC COMPLEX IS ASSEMBLED.

CC COMPLEX IS ASSEMBLED.

CC C. FUNCTION: DERIVED FROM PROTEOLYTIC DEGRADATION UPON WHICH THE LYTIC CC C5 ANAPHYLATOXIN IS A MEDIATOR OF LOCAL INFLAMMATORY PROCESS. IT PERMEABILITY AND CAUSES HISTAMINE RELEASE FROM MAST CELLS AND CC PERMEABILITY AND CAUSES HISTAMINE RELEASE FROM MAST CELLS AND POLYMORPHONICLEAR LEUKOCYTES (C15M MUSCLE, INCREASES VASCULAR PROMPHONICLEAR LEUKOCYTES (CHEMONINESTS) AND DIRECT THEIR CC POLYMORPHONICLEAR LEUKOCYTES (CHEMONINESTS) AND DIRECT THEIR CC -: SUBUNIT: C5 PRECURSOR IS FIRST PROCESSED BY THE REMOVAL OF 4 BASIC CC RESIDUES, FORMING TWO CHAINS, BETA & ALPHA, LINKED BY A DISULFIDE RELEASING C5A ANAPHYLATOXIN & GENERATING C5B (BETA CHAIN + ALPHA)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 5
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Best Local S
Matches 15
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01-NOV-1990 (Rel. )
16-OCT-2001 (Rel. 4
Complement C5 precu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.

MEDIINE-90153853; PubMed-2303408;

Wetsel R.A., Fleischer D.T., Haviland D.L.;

"Deficiency of the murine fifth complement component (C5). A 2-base pair gene deletion in a 5'-exon.";

J. Biol. Chem. 265:2435-2440(1990).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MEDLINE=87185363;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE OF 41-1680 FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mus musculus (Mouse).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     anaphylatoxin].
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CO5_MOUSE
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DOMAIN

24

58

ANAPHYLATOXIN-LIKE.

DISULFID

25

DISULFID

25

DISULFID

27

CARBOHYD

66

66

N-LINKED (GLCNAC. . )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SMART; SM00104; ANATO; 1.

PROSITE; PS00477; ALPHA_2_MACROGLOBUL!

PROSITE; PS01177; ANAPHYLATOXIN_1; 1.

PROSITE; PS01178; ANAPHYLATOXIN_2; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE
                                                                                                                                                         SIMILARITY: TO C3, C4 AND ALPHA-2-MACROGLOBULIN. SIMILARITY: CONTAINS 1 ANAPHYLATOXIN-LIKE DOMAIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     24
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CCYDGASVNNDETCEQRAAR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     76 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              precursor (Hemolytic complement) [Contains:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PubMed=2436653;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             06, Created)
16, Last sequence update)
40, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8869 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            73.7%;
75.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2_MACROGLOBULIN; PARTIAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   20
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BY SIMILARITY.
BY SIMILARITY.
BY SIMILARITY.
N-LINKED (GLCNA
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2EC15183A6E54769 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1680 AA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
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RESULT 6
CO4_MOUSE
ID CO4_M
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Best Local
                                                                                                                                                                                                                                                               Matches
                                                                                               P01029; Q61859;
21-JUL-1986 (Rel. 01, Created)
01-AUG-1988 (Rel. 08, Last sequence update)
16-OCT-2001 (Rel. 40, Last annotation update)
Complement C4 precursor [Contains: C4A anaphy
SEQUENCE FROM N.A.
MEDLINE=85298264; PubMed=3862104;
Sepich D.S., Noonan D.J., Ogata R
                                                Mus musculus (Mouse).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus
                                            NCBI_TaxID=10090;
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DISULFID
DISULFID
DISULFID
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EMBL; M35526; AAA37348.1; -.
PIR; A27538; A27538.
PIR; A35530; A35530.
HSSP; P01031; IKJS.
MGD; MGI:96031; Hc.
                                                                                                                                                              CO4_MOUSE
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CHAIN
PEPTIDE
                                                                                                                                                                                                                                                                                                        SEQUENCE
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CHAIN
                                                                                                                                                                                                                  702
                                                                                                                                                                                                                                                                                                                             VARIANT
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PRODOM; PD003264; Anaphylatoxin; 1.
SMART; SM00104; ANATO; 1.
PROSITE; PS00477; ALPHA 2 MACROGLOBULIN; FALSE_NEG.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PROSITE; PS01177; ANAPHYLATOXIN_1; PROSITE; PS01178; ANAPHYLATOXIN_2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Pfam; PF01835; A2M_N; 1. Pfam; PF01835; A2M_N; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Signal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Plasma;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Complement
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             InterPro;
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                                                                                                                                                                                                                                     1 CCYDGASVNNDETCEQRAAR
                                                                                                                                                                                                              CCYDGARVNFYETCEERVAR 721
                                                                                                                                                                                                                                                                      Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Membrane
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  IPR002890; A2M_N.
IPR000020; Anaphylatoxin
IPR001840; Anaphylatoxn.
                                                                                                                                                                                                                                                                                                                 675
679
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216
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IPR001134; Netrin_C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           pathway; Complement alternate pathway; Glycoprotein;
nbrane attack complex; Cytolysis; Inflammatory respon
                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                           STANDARD;
                                                                                                                                                                                                                                                                                                       AA;
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   Ogata R.T.;
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                                                                                                                                                                                                                                                                                                     , WM
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                                                                                                                                                                                                                                                                    Score 84;
Pred. No.
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N-LINKED (GLCNAC. . .) (POTENTIAL).

N-LINKED (GLCNAC. . .) (POTENTIAL).
                                                                                                                                                                                                                                                                                                         N-LINKED (GLCNAC. . .) (POTENTIAL).
Y -> L (IN DEFECTIVE VARIANT C5D).
MISSING (IN DEFECTIVE VARIANT C5D).
                                                                                                                                                                                                                                                                                                                                                                                                                         COMPLEMENT C5 ALPH
C5A ANAPHYLATOXIN.
C5B (ALPHA').
                                                                                                                                                                                                                                                                                                                                                                                          ANAPHYLATOXIN-LIKE.
BY SIMILARITY.
BY SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMPLEMENT
                                                                                                                                                                                                                                                        Mismatches
                                                                                                                                                                                                                                                                                                                                                                                        SIMILARITY.
                                                                                                                                                                                                                                                                                                   81EB5A16FAC7D95C CRC64;
                                                                                                                                                        1738 AA
                                                                                                anaphylatoxin].
                                                                                                                                                                                                                                                                  3e-05;
                                                                                                                                                                                                                                                                              DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    C5
                                                                                                                                                                                                                                                                                                                                                                                                                                             ALPHA CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BETA CHAIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Inflammatory response;
                                                                                                                                                                                                                                                                            Length 1680;
                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                      0;
                                                                                                                                                                                                                                                      Gaps
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PARS RAPERTARA RAPERTA
                                                                                                                                                                                                                       Ogata R.T., Shreffler D.C., Sepich D.S., Lilly S.P.; "CDNA clone spanning the alpha-gamma subunit junction in the precursor of the murine fourth complement component (C4)."; Proc. Natl. Acad. Sci. U.S.A. 80:5061-5065(1983).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE OF 1105-1449 FROM N.A.
MEDLINE-85166208; PubMed-3856857;
Levi-Strauss M., Tosi M., Steinmetz M., Klein J., Meo T.;
"Multiple duplications of complement C4 gene correlate with H-2-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     "Isolation of cDNA clones specifying the fourth component of mouse complement and its isotype, sex-limited protein.";

Proc. Natl. Acad. Sci. U.S.A. 81:6822-6826(1984).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ogata R.T., Rosa P.A., Zepf N.E.;
Ogata R.T., Rosa P.A., Zepf N.E.;
"Sequence of the gene for murine complement component
J. Biol. Chem. 264:16565-16572(1989).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MEDLINE-87309760; PubMed=3624865; Rosa P.A., Sepich D.S., Robins D.M., (Rosa P.A.) Sepich D.S., Robins D.M., (Rosa P.A.) Sepich D.S., Robins D.M., (Rosa P.A.) Sepich D.S., Robins D.S., Ro
DNA clones for mouse C4 and S
Immunol. Rev. 87:81-99(1985)
                                                                                                                                                                                                                                                                                                                                     SEQUENCE OF 1360-1511 FROM N.A. MEDLINE-83273751; PubMed-6192448;
                                                                                                                                                                                                                                                                                                                                                                                                                    Toosi M., Levi-Strauss M., Duponchel C., Meo T.;
"Sequence heterogeneity of murine complementary DNA clones related
the C4 and C4-Slp isoforms of the fourth complement component.";
Philos. Trans. R. Soc. Lond., B, Biol. Sci. 306:389-394(1984).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE OF 1257-1376 FROM N.A. MEDLINE-85038859; PubMed-6149581;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    controlled testosterone-independent expression of its sex-limited isoform, C4-Slp.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE OF 1099-1142 FROM N.A. STRAIN-B10.WR, C57BL/6, C3H/He,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Nonaka M., Nakayama K., Yeul Y.D., Takahashi M.;
"Complete nucleotide and derived amino acid sequences of component of mouse complement (C4). Evolutionary aspects.
J. Biol. Chem. 260:10936-10943(1985).
                                                                                 Nonaka M.,
                                                                                                              STRAIN-FM; TISSUE-Liver;
MEDLINE-86031969; PubMed-2997024;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Shimizu A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STRAIN-FM; TISSUE-Liver;
MEDLINE-85289294; PubMed-2993295;
Nonaka M., Nakayama K., Yeul Y.D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STRAIN-B12.WR; TISSUE-Liver; MEDLINE-89380278; PubMed-2777798;
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                          Nonaka M., Nakayama K., Yeul Y.D., Shim: "Molecular cloning and characterization DNA clones for mouse C4 and Slp.";
                                                                                                                                                                     SEQUENCE OF 1-128 FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MEDLINE-90353398; PubMed-2387317;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Nonaka M., Takahashi M., Natsuume-Sakai S.,
Shimizu A., Honjo T.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MEDLINE-85038607;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Complete cDNA sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ta R.T., Zepf N.E.;
from C4-high and C4-low mouse strains have identical
from corresponding to the isotype-specific segment
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   J. Immunol.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      82:1746-1750(1985).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CBA/J, B10.BR, and
                                                       Shimizu
ation of
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                                                       A., Takahashi M.; complementary and
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of human
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Pfam; PF00207; A2M; 1.
Pfam; PF01759; WTR; 1.
Pfam; PF01821; ANATO; 1.
Pfam; PF01835; A2M_N; 1.
Pfam; PF01835; A2M_N; 1.
PRINTS; PR00004; ANAPHYLATOXN.
PRODOM; PD003264; ANAPHYLATOXN,
PROSTIE; PS00104; ANATO; 1.
PROSTIE; PS00477; ALPHA_2_MACROGLOBULIN; 1.
PROSTIE; PS01178; ANAPHYLATOXIN_1; 1.
PROSTIE; PS01178; ANAPHYLATOXIN_2; 1.
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                                                                                                                                                                                                                      InterPro; IPR001840; InterPro; IPR001599; InterPro; IPR001134;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              "Identification of the 5'-flanking regulatory region responsible for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Nonaka M., Kimura
Takahashi M.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   [11]
SEQUENCE OF 1-21 FROM N.A.
MEDLINE=87017050; PubMed=3
                                                                                                                                                                                                                                                            InterPro;
                                                                                                                                                                                                                                                                        InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ANAPHYLATOXIN.
SUBUNIT: THIS PROTEIN IS SYNTHESIZED AS A SINGLE-CHAIN PRECURSOR AND, PRIOR TO SECRETION, IS ENZYMATICALLY CLEAVED TO FORM A TRIM OF NONIDENTICAL CHAINS (ALPHA, BETA, AND GAMMA).
MISCELLANEOUS: C4 IS A MAJOR HISTOCOMPATIBILITY COMPLEX CLASS-II.
                                                                                                                                                                                                                                                                                                          A22039;
A24558;
A29059;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           - Natl. Acad. Sci. U.S.A. 83:7883-7887(1986).
FUNCTION: C4 PLAYS A CENTRAL ROLE IN THE ACTIVATION OF THE
CLASSICAL PATHWAY OF THE COMPLEMENT SYSTEM. IT IS PROCESSED
ACTIVATED C1 WHICH REMOVE FROM THE ALPHA CHAIN THE C4A
                                                                                                                                                                                                                                                                                                                                                                 M11729; AAA39554.1;
M12968; AAA39558.1;
M12970; AAA39555.1;
M12970; AAA39555.1;
M12972; AAA39556.1;
M12972; AAA39557.1;
M17989; AAA39557.1;
M17440; AAA39561.1;
M14226; AAA39561.1;
M14226; AAA39564.1;
M14226; AAA39112.1;
M155493; CAA39114.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  European Bioinformatics Institute.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SIMILARITY: CONTAINS 1 ANAPHYLATOXIN-LIKE DOMAIN.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PubMed=3464002;
                                                                                          Plasma; Glycoprotein;
                                                                     19
                                                                                                                                                                                                                                               Anaphylatoxin. Anaphylatoxn.
                                                                                                                                                                                                                         Netrin_C
                                                                                                                                                                                                                                   MacrogloblnA2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             C5 AND ALPHA-2-MACROGLOBULIN
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                                  COMPLEMENT C4,
                                                         COMPLEMENT
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                                                                                          Sulfation; Signal;
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           GAMMA CHAIN
                                  ALPHA CHAIN
                                                         BETA CHAIN
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Best Local
        BASOPHILIC LEGROCYTES.

1. SIMILARITY: CONTAINS 1 ANAPHYLATOXIN-LIKE DOMAIN.
PIR; JL0036; JL0036.
HSSP; P01031; IKJS.
InterPro; IPR001020; Anaphylatoxin.
InterPro; IPR001840; Anaphylatoxn.
InterPro; IPR001899; MacrogloblnA2.
Pfam; PF01821; ANATO; I.
                                                                                                                                                                                                                                               Cui L.-X., Ferreri K., Hugli T.E.;
"Characterization of rat anaphylatoxins C4a and C5a.";
Fed. Proc. 44:991-991(1985).
                                                                                                                                                                                                                                                                                                                                                               Mol.
                                                                                                                                                                                                                                                                                                                                                                     MEDLINE=88334568; PubMed=3262196; Cui L.-X., Ferreri K., Hugli T.E.; "Structural characterization of the C4a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus. NCBI_TaxID=10116;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       01-AUG-1988 (Rel. 08, Created)
01-FEB-1991 (Rel. 17, Last sequence update)
01-FEB-1996 (Rel. 33, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CO4A_RAT
P08649;
                                                                                                                                                                                                                                                                                                                       SEQUENCE.
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                                                                                                                                                                                   FUNCTION: DERIVED FROM PROTEOLYTIC DEGRADATION OF COMPLEMENT CACAL ANAPHYLATOXIN IS A MEDIATOR OF LOCAL INFLAMMATORY PROCESS. INDUCES THE CONTRACTION OF SMOOTH MUSCLE, INCREASES VASCULAR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 CCYDG-ASVNNDETCEQRAAR 20
                                                                                                                                                                   INDUCES THE CONTRACTION OF SMOOTH MUSCLE, INCREASES PERMEABILITY AND CAUSES HISTAMINE RELEASE FROM MAST
                                                                                                                                                                                                                                                                                                                                                          Immunol.
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F -> Y (IN REF. 4).

G -> E (IN REF. 4).

Q -> E (IN REF. 5).

R -> G (IN REF. 5).

D -> AI (IN REF. 5).

P -> R (IN REF. 5).

P -> E (IN REF. 5).

V -> A (IN REF. 7).

A -> T (IN REF. 7).

K -> N (IN REF. 4).

G -> S (IN REF. 4).

R -> K (IN REF. 4).

R -> V (IN REF. 4).

A -> Y (IN REF. 4).

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This SWISS-PROT entry is copyright. It is produced through a collab between the Swiss Institute of Bioinformatics and the EMBL outst the European Bioinformatics Institute. There are no restrictions use by non-profit institutions as long as its content is in modified and this statement is not removed. Usage by and for comentities requires a license agreement (See http://www.isb-sib.ch/anor send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                              Submitted (OCT-1994) to the EMBL/GenBank/DDBJ databases.
-!- FUNCTION: C4 PLAYS A CENTRAL ROLE IN THE ACTIVATION OF THE CLASSICAL PARHWAY OF THE COMPLEMENT SYSTEM. IT IS PROCESSEI ACTIVATED C1 WHICH REMOVE FROM THE ALPHA CHAIN THE C4A
                                                                                                                                                                                                                                                                                                                                                                                                                 TISSUE-Liver;
                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE OF 78-920 FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Smith M.A., Gerrie L.M., Dunbar B., Fothergill J.E., "Primary structure of bovine complement activation fr third anaphylatoxin. Purification and complete amino Biochem. J. 207:253-260(1982).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CO4_BOVIN STANDARD; PRT; 920 AA. P01030; Q27993; Q27992; 21-JUL-1986 (Rel. 01, Created) 15-JUL-1998 (Rel. 36, Last sequence update) 16-OCT-2001 (Rel. 40, Last annotation update) 16-OCT-2001 (Rel. 40, Last annotation update)
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DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE OF 1-77.
MEDLINE=83126436;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Bos taurus (Bovine).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
Bovidae; Bovinae; Bos.
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                                                                                                                  SIMILARITY: TO C3, C5 AND ALPHA-2-MACROGLOBULIN.
SIMILARITY: CONTAINS 1 ANAPHYLATOXIN-LIKE DOMAIN.
                                                                                                                                                                    BASOPHILIC LEUKOCYTES.
SUBUNIT: THIS PROTEIN IS SYNTHESIZED AS A SINGLE-CHAIN PRECURSOR AND, PRIOR TO SECRETION, IS ENZYMATICALLY CLEAVED TO FORM A TRIME!
OF NONIDENTICAL CHAINS (ALPHA, BETA, AND GAMMA).
MISCELLANEOUS: C4 IS A MAJOR HISTOCOMPATIBILITY COMPLEX CLASS-III
                                                                                                                                                                                                                                                  FUNCTION: DERIVED FROM PROTEOLYTIC DEGRADATION OF COMPLEMENT C4, C4A ANAPHYLATOXIN IS A MEDIATOR OF LOCAL INFLAMMATORY PROCESS. IT INDUCES THE CONTRACTION OF SMOOTH MUSCLE, INCREASES VASCULAR PERMEABILITY AND CAUSES HISTAMINE RELEASE FROM MAST CELLS AND
                                                                                                                                                                                                                                                                                                                        ANAPHYLATOXIN.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          pathway; Plasma; Inflammatory response; Glycoprotein 23 57 ANAPHYLATOXIN-LIKE.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PubMed=6760852;
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no acid sequenc
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                                                                               a collaboration -
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(See http://www.isb-sib.ch/announce/

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A TO THE PROPERTY OF THE PROPE
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CO4_HUMAN
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Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                               CO4_HUMAN STANDARD; PRT; 1744 AA. PO1028; Q9UFP5; Q9NPK5; Q13906; Q13160; Q14835; 21-JUL-1986 (Rel. 01, Created) 15-JUN-2002 (Rel. 41, Last sequence update) 15-JUN-2002 (Rel. 41, Last annotation update) Complement C4 precursor (Contains: C4A anaphylatoxin).
           "The complete exon-intron structure of a human complement component C4A gene. DNA sequences, polymorphism, and linkage to the
                                                                                  SEQUENCE FROM N.A. (C4A).
MEDLINE-91108039; PubMed-1988494;
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CARBOHYD
SEQUENCE
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21-hydroxylase gene.";
                                                                                                                                                                            Belt K.T., Carroll M.C., Porter R.R.;
"The structural basis of the multiple component C4.";
                                                                                                                                                                                                                                                                                                                                                 Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Mammalia; Eutheria; Primates; Catarrhini; Hominidae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MOD_RES
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DOMAIN
                                                                       Yu C.Y.;
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PROPEP
                                                                                                                                                                                                                                          MEDLINE-84156544; PubMed-6546707;
                                                                                                                                                                                                                                                                 TISSUE-Liver;
                                                                                                                                                                                                                                                                                                                                   NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                               Homo sapiens (Human)
                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A. (C4A AND C4B).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PROSITE; PS00477; ALPHA_2_MACROGLOBULIN; PROSITE; PS01177; ANAPHYLATOXIN_1; 1. PROSITE; PS01178; ANAPHYLATOXIN_2; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                InterPro; IPR001599; MacrogloblnA2.
InterPro; IPR001134; Netrin_C.
PRINTS; PR00004; ANAPHYLATOXN.
ProDom; PD003264; Anaphylatoxin; 1.
SMART; SM00104; ANATO; 1.
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                                                                                                                                                     36:907-914(1984).
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12; Conser
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Pred. No. 0.5;
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N-LINKED (GLCNAC. . ) (POTENTIAL).
N: 1425AOBD945F5497 CRC64;
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C4A ANAPHYLATO
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STRUCTURAL BASIS OF POLYMORPHISM.
MEDITINE-87080272; PubMed=2431902;
YU C.Y., Belt K.T., Giles C.M., Campbell R.D., Porter R.R.;
"Structural basis of the polymorphism of human complement components
C4A and C4B: gene size, reactivity and antigenicity.";
EMBO J. 5:2873-2881(1986).
                                                                                                                                                                                                                                                                              Sargent C.A., Anderson M.J., Hsieh S.L., Kendall E., Gomez-Escobar N., Campbell R.D.; "Characterisation of the novel gene Gll lying adjacent to complement C4A gene in the human major histocompatibility
   Anderson M.J.,
               VARIANT C4A6 ALLOTYPE MEDLINE-92242905; Publ
                                                                                                                                                                                                                                                                                                                                                                                     Harrison R.A., Thomas M.L., Tack B.F.; "Sequence determination of the thiolester site of the component of human complement."; Proc. Natl. Acad. Sci. U.S.A. 78:7388-7392(1981).
                                                                                                                                                                                         Hortin G., SIms H., Strauss A.W.; "Identification of the fourth component
                                                                                                                                                                                                                                         SEQUENCE OF 1405-1431,
                                                                                                                                                                                                                         MEDLINE=86111851; PubMed=3944109;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MEDLINE-81264286; PubMed-6167582;
Moon K.E., Gorski J.P., Hugli T.E.;
"Complete primary structure of human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MEDLINE-85156269; PubMed-3838531;
Belt K.T., Yu C.Y., Carroll M.C., Porter R.F.
"Polymorphism of human complement component
                                                                                                                                                                                 human complement.
                                                                                                                                                                                                                                                                                                                                              MEDLINE=94282044; PubMed=8012361;
                                                                                                                                                                                                                                                                                                                                                              SEQUENCE OF 1-21 FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     "Amino acid sequence around the thiol and human complement component C4."; Biochem. J. 199:359-370(1981).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE OF 957-1044.
MEDLINE=82182029; PubMed=6978711;
                                                                                                                                                                                                                                                                                                                                                                                                                                                   WEDLINE=82150875; PubMed=6950384;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE OF 990-1037
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       J. Biol. Chem.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE OF 680-756
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Barlow
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Rowen L., Dankers C., Baskin D., Faust J., Loretz C., Ahearn M.E., Banta A., Swartzell S., Smith T.M., Spies T., Hood L.; "Sequence determination of 300 kilobases of the human class III MHC locus.":
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MEDLINE=96163032; PubMed=8575831;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         J. Immunol. 146:1057-1066(1991).
[3]
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                                                                                                                                                                 Biol.
                                                                                                                                                                                                                                                                        Mol. Genet.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                C4B1, DR3 haplotype.
                                                                                                                                                                   Chem.
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Milner C.M., Cotton G.H.,
                                                                                                                                                                261:1786-1793(1986).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     256:8685-8692(1981).
                                                                                                                                                                                                                                                                      3:481-488(1994).
                 PubMed=1573268;
                                                                                                                                                                                                                                      AND SULFATION.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  C4a anaphylatoxin.";
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 Campbell R.D.;
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ent C4.";
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ProDom; PD003264; Anaphylatoxin; 1. SMART; SM00104; ANATO; 1.
                                                                                                    Pfam; PF00207; A2M; 2. Pfam; PF01759; NTR; 1. Pfam; PF01821; ANATO; 1. Pfam; PF01835; A2M_N; 1.
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Genew; HGNC:1324; C4B.
Genew; HGNC:1323; C4A.
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ANAPHYLATOXIN:

ANAPHYLATOXIN:

FUNCTION: DERIVED FROM PROTEDLYTIC DEGRADATION OF COMPLEMENT C4,

CC4A ANAPHYLATOXIN IS A MEDIATOR OF LOCAL INFLAMMATORY PROCESS. IT

INDUCES THE CONTRACTION OF SMOOTH MUSCLE, INFLAMMATORY PROCESS. IT

INDUCES THE CONTRACTION OF SMOOTH MUSCLE, INFLAMMATORY PROCESS.

PERMEABILITY AND CAUSES HISTAMINE RELEASE FROM MAST CELLS AND

BASOPHILIC LEUKOCYTES.

SUBUNIT: THIS PROTEIN IS SYNTHESIZED AS A SINGLE-CHAIN PRECURSOR

AND, PRIOR TO SECRETION, IS ENTYMATICALLY CLEAVED TO FORM A TRIMER

OF NONLIDENTICAL CHAINS (ALPHA, BETA, AND GAMMA).

-I- POLYMORPHISM: HUMAN COMPLEMENT CAMPONENT C4 IS POLYMORPHIC WITH AT

LEAST TWO LOCI, C4A AND C4B. 13 ALLELES OF C4A AND 22 ALLELES OF

C4B HAVE BEEN DETECTED. THE ALLELE SHOWN HERE IS C4A4.

-I- POLYMORPHISM: THE C4A ALLELES CARRY THE BLOOD GROUP RODGERS WHILE

THE C4B ALLELES CARRY THE BLOOD GROUP RODGERS WHILE

THE C4B ALLELES CARRY THE BLOOD GROUP RODGERS WHILE

THE C4B ALLELES CARRY THE BLOOD GROUP RODGERS WHILE

THE C4B ALLELES CARRY THE BLOOD GROUP RODGERS WHILE

THE C4B ALLELES CARRY THE BLOOD GROUP RODGERS WHILE

THE C4B ALLELES CARRY THE BLOOD GROUP RODGERS WHILE

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THE C4B ALLELES CARRY THE BLOOD GROUP RODGERS WHILE

THE C4B ALLELES CARRY THE BLOOD GROUP RODGERS WHILE

THE C4B ALLELES CARRY THE BLOOD GROUP RODGERS WHILE

THE C4B ALLELES CARRY THE BLOOD GROUP RODGERS WHILE

THE C4B ALLELES CARRY THE BLOOD GROUP RODGERS WHILE

THE C4B ALLELES CARRY THE BLOOD GROUP RODGERS WHILE
                                                                                                                                                                                                          InterPro; IPR000020; Anaphylatoxin.
InterPro; IPR001599; MacrogloblnA2.
InterPro; IPR001134; Netrin_C.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       entities requires a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        use by non-profit institutions as long modified and this statement is not removed.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             the European Bioinformatics Institute.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 -!- SIMILARITY: TO C3, C5 AND ALPHA-2-MACROGLOBULIN.
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-i- FUNCTION: C4 PLAYS A CENTRA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             "The coding sequence of the hemolytically inactive C4A6 allotype of human complement component C4 reveals that a single arginine to tryptophan substitution at beta-chain residue 458 is the likely cause of the defect.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MBL; K02403; AAB59537.1; ...

MBL; K02404; AAA59651.1; ...

MBSH5; AAA51855.1; ...

MBL; M59816; AAA51855.1; ...

MBL; M59816; AAA51855.1; ...

MBL; AF019413; AAB67980.1; ...

MBL; AL049547; CAB89302.1; ...

MBL; M14823; AAA52292.1; ...

MBL; M14824; AAA52292.1; ...

MBL; X77491; CAB54627.1; ...

MBL; X77491; CAA54627.1; ...

MBL; X77491; CAA54637.1; ...
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACTIVITY.

MISCELLANEOUS: C4A ALLOTYPES REACT MORE RAPIDLY WITH THE AMINO GROUP OF PEPTIDE ANTIGENS WHILE C4B ALLOTYPES REACT MORE RAPIDLY WITH THE HYDROXYL GROUP OF CARBOHYDRATE ANTIGENS.

MISCELLANEOUS: C4 IS A MAJOR HISTOCOMPATIBILITY COMPLEX CLASS-III
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FUNCTION: C4 PLAYS A CENTRAL ROLE IN THE ACTIVATION OF THE CLASSICAL PATHWAY OF THE COMPLEMENT SYSTEM. IT IS PROCESSED BY ACTIVATED C1 WHICH REMOVE FROM THE ALPHA CHAIN THE C4A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     P01031; 1KJS
     PS00477; ALPHA_2_MACROGLOBULIN; 1. PS01177; ANAPHYLATOXIN_1; 1.
                                                                                                                                                                                                                                                                                           IPR002890; A2M_N.
ANAPHYLATOXIN_1; 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      license agreement (See http://www.isb-sib.ch/announce/
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                                                               This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bicinformatics and the EMBL outstation the European Bicinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                             01-NOV-1990 (Rel. 16, Created)
01-NOV-1990 (Rel. 16, Last sequence update)
01-NOV-1990 (Rel. 16, Last annotation update)
RNA-4 hypothetical 31.9 kDa protein.
Beet necrotic yellow vein mosaic virus (isolate G1).
Viruses; ssrNA positive-strand viruses, no DNA stage.
RCHI_TaxID=12257;
   SEQUENCE
               Hypothetical
                          PIR;
                                                       or send an email to license@isb-sib.ch).
                                   EMBL; M36897; AAA42800.1; -.
                                                                                                                                                   Bouzoubaa S., Guilley H., Jonard G., Richards K., Putz C.; "Nucleotide sequence analysis of RNA-3 and RNA-4 of beet necrotic yellow vein virus, isolates F2 and G1."; J. Gen. Virol. 66:1553-1564(1985).
                                                                                                                                                                                                         SEQUENCE FROM N.A.
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01-NOV-1990
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Complement pathway; Plasma; Glycoprotein; Sulfation; Signal;
                                                                                                                                                                                                                                                                                                                                                                                      702 CCQDGVTRLPMMRSCEQRAAR 722
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Inflammatory response; Polymorphism; Disease mutation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Local
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                          C44503;
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al protein.
282 AA; 3
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52.4%;
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Pred. No. 4.1;
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D -> G (IN C4A1,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         R -> W (IN C4A6).
/FTId=VAR_001987.
P -> L (IN C4A3).
AA7C0351C54FE0CC CRC64;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COMPLEMENT C4, BETA CHAIN
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GAMMA CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 C4B1 AND C4B3).
                                                                                                                                                                                                                                         stage; Benyvirus
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 1744;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (POTENTIAL)
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Query Match Matches Best

Local

Similarity 8; Conserv

Conservative

42.1%; 57.1%;

Score 48; Pred. No.

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                         EMBL; X78801; CAA55384.1; EMBL; X78801; CAA55385.1; PIR; A20872; A20872.
                                                                                                                                       modified and this statement is not removed. Usage by and for commercial entitles requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BIOCHIM. BIOPHYS. ACTA 1162:230-232(1993).

-!- FUNCTION: IS ABLE TO INHIBIT ALL FOUR CLASSES OF PROTEINASES BY A UNIQUE "TRAPPING" MECHANISM. THIS PROTEIN HAS A PEPTIDE STRETCH, CALLED THE 'BAIT RECION' WHICH CONTAINS SPECIFIC CLEAVAGE SITES FOR DIFFERENT PROTEINASES. WHEN A PROTEINASE CLEAVES THE BAIT REGION, A CONFORMATIONAL CHANGE IS INDUCED IN THE PROTEIN WHICH TRAPS THE PROTEINASE. THE ENTRAPPED ENZYME REMAINS ACTIVE AGAINST LOW MOLECULAR WEIGHT SUBSTRATES (ACTIVITY AGAINST HIGH MOLECULAR WEIGHT SUBSTRATES IS GREATLY REDUCED).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Nielsen K.L., Sottrup-Jensen L.; "Evidence from sequence analysis that hen egg-white ovomacroglobulin (ovostatin) is devoid of an internal beta-Cys-gamma-Glu thiol
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TISSUE-Egg white;
MEDLINE-93192299; PubMed-7680577;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TISSUE-Egg white;
MEDLINE-83238315; PubMed-6408074;
Nagase H., Harris E.D. Jr., Woessner J.F.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ovostatin precursor (Ovomacroglobulin) Gallus gallus (Chicken).
                                                                                                                                                                                                                                                                    the European Bioinformatics Institute.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          "Ovostatin: a novel proteinase inhibitor from chicken egg white. I Purification, physicochemical properties, and tissue distribution
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     "Amino acid sequence of hen ovomacroglobulin (ovostatin) deduced from
cloned cDNA.";
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    01-NOV-1995 (Rel. 32,
01-NOV-1995 (Rel. 32,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MEDLINE-95218210; PubMed-7535598;
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                                                                                                                                                                                                                                                                                                                                                                                     PTM: CONTAINS 56 MOL GLUCOSAMINE PER MOL SUBUNIT.
SIMILARITY: TO OTHER PROTEINS OF THE ALPHA-MACROGLOBULIN FAMILY,
INCLUDING COMPLEMENT COMPONENTS C3, C4, AND C5.
                                                                                                                                                                                                                                                                                                                                                                                                                            OF THIS FAMILY.
PTM: CONTAINS 56 MOL
SIMILARITY: TO OTHER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PTM: THIS PROTEIN LACKS THE THIOESTER BOND FOUND
                                                                                                                                                                                                                                 SWISS-PROT entry is copyright. It is produced through a ceen the Swiss Institute of Bioinformatics and the EMBL European Bioinformatics Institute. There are no restrict by non-profit institutions as long as its content is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LINKED CHAINS
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PROSITE: PSO1228; COF\_1: 1.
PROSITE: PSO1229; COF\_2: 1.
PROSITE: PSO1229; COF\_2: 1.
Hypothetical protein: Complete
SEQUENCE 281 AA; 32614 MW;

BF44564E7C7FBF11 CRC64;

proteome

Pfam; PF00702;

Hydrolase;

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RESULT 12
Y125_MYCPN
Y125_MYCPN
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16-OCT-2001 (Rel. 40
Hypothetical prof
MPN264 OP
                                                                          This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial
                                                                                                                                                                                                                                           SEQUENCE FROM N.A.
STRAIN-ATCC 29342 / M129;
MEDLINE-97105885; PubMed-8948633;
Himmelreich R., Hilbert H., Plage
InterPro; IPR001454; Hlgnase/hydrlase.
InterPro; IPR000150; Hypothet_cof.
                            EMBL; AE000056; AAB96217.1; -
                                                    or send an email to license@isb-sib.ch).
                                                                   entities requires a license agreement
                                                                                                                                                                                        Nucleic Acids Res. 24:4420-4449(1996)
                                                                                                                                                                                                        pneumoniae."
                                                                                                                                                                                                                                                                                                                                            Mycoplasma pneumoniae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Pfam; PF00207; A2M; 1.
Pfam; PF01835; A2M_N; 1.
PROSITE; PS00477; ALPHA_2_MACROGLOBULIN;
                                                                                                                                                                                                                                    Herrmann R.;
                                                                                                                                                                                                                                                                                                                             Bacteria; Firmicutes; Mollicutes; Mycoplasmataceae; Mycoplasma.
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                                                                                                                                                                                                                                                                                                                  NCBI_TaxID=2104;
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InterPro; IPR001599; Macrog
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or send an email to license@isb-sib.ch).
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"Prediction from sequence comparisons of residues of factor H involved in the interaction with complement component C3b.";

Biochem. J. 315:523-531(1996).
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Q28085;
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SIMILARITY: CONTAINS AT LEAST 13 SUSHI (SCR) DOMAINS.
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factor H (H factor 1) (Fragments).
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RESULT 14
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YLJ9_CAEEL
YLJ9_CAEEL
P34372;
P34372;
O1-FEB-1994 (Rel. 28, Created)
15-JUN-2002 (Rel. 41, Last sequence update)
15-JUN-2002 (Rel. 41, Last annotation update)
15-JUN-2002 (Rel. 41, Last annotation update)
15-JUN-2002 (Rel. 41, Cast annotation update)
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                                                                                                                                       Waterston R.; Submitted (AUG-2001) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                         Wilson R., Alnscough R., Anderson K., Baynes C., Berks M.,
Bonfield J., Burton J., Connell M., Copsey T., Cooper J., Coulson A
Craxton M., Dear S., Du Z., Durbin R., Favello A., Fraser A.,
Fulton L., Gardner A., Green P., Hawkins T., Hillier L., Jier M.,
Johnston L., Jones M., Kershaw J., Kirsten J., Laisster N.,
Latreille P., Lightning J., Lloyd C., Mortimore B., O'Callaghan M.,
Parsons J., Percy C., Rifken L., Roopra A., Saunders D., Shownkeen
Sims M., Smaldon N., Smith A., Smith M., Sonhlammer E., Staden R.,
Sulston J., Thierry-Mieg J., Thomas K., Vaudin M., Vaughan K.,
Waterston R., Watson A., Weinstock L., Wilkinson-Sproat J.,
Cachilman D.
           EMBL; L14433; AAA27971.2; -.
                                                                                                                                                                                                  REVISIONS
                                                                                                                                                                                                                 Nature 368:32-38(1994).
[2]
                                                                                                                                                                                                                                           "2.2 Mb of contiguous nucleotide sequence
elegans.";
                                                                                                                                                                                                                                                                      Wohldman P
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MEDLINE=94150718; PubMed=7906398;
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Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Pfam; PF00650; CRAL_TRIO; 1.
SMART; SM00516; SEC14; 1.
PROSITE; PS50191; CRAL_TRIO;
                                                                                                                                                                                                                                                                 use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                             This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Chinen K., Takahashi E., Nakamura Y.;
"Isolation and mapping of a human gene (SEC14L), partially homologous
to yeast SEC14. that contains a variable number of tandem repeats
(VNTR) site in its 3' untranslated region.";
(YVTGgenet. Cell Genet. 73:218-223(1996).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  $141_HUMAN STANDARD; PRT; 715 AA. 092503; Q99780; 01-NOV-1997 (Rel. 35, Created) 01-NOV-1997 (Rel. 35, Last sequence update) 15-JUN-2002 (Rel. 41, Last annotation update) $EC14-1ike protein 1. $EC14L1 OR $EC14L.
                                                                                                                                                       EMBL; D67029; BAA11048.1; -.
EMBL; U79284; AAB50220.1; -.
Genew; HGNC:10698; SEC14L1.
MIM; 601504; --
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                                                                                                                            InterPro; IPR001251; CRAL_TRIO
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Pfam; PF02743; Cache; 1.
SMART; SM00327; VWA; 1.
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InterPro; IPR002035; vWFA.
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CRAL_TRIO; 1.
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Query Match
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Search completed: May 1, 2003, 22:17:44 Job time : 13 secs

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114
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063078 rattus norv
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070346 mus musculu
09vi74 drosophila
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09n497 caenorhabdi
065686 beet necrot
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09d9865 beet necrot
09d875 beet necrot
09d876 beet necrot
09d867 beet necrot
09d8670 beet necrot
09d8670 beet necrot
09d8670 beet necrot
09d8670 plasmodium
09dty7 plasmodium
085429 rice stripe
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# ALIGNMENTS

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Best Local
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InterPro; IPR002890; A2M_N.

InterPro; IPR0002020; Anaphylatoxin.

InterPro; IPR001840; Anaphylatoxn.

InterPro; IPR001599; MacroglobinA2.

InterPro; IPR001134; Netrin_C.

Pfam; PF01835; A2M_N; 1.

Pfam; PF01821; ANATO; 1.

Pfam; PF01821; ANATO; 1.
                                                                                                                    O70346;
01-AUG-1998 (TrEMBLrel. 07,
01-AUG-1998 (TrEMBLrel. 07,
01-MAR-2002 (TrEMBLrel. 20,
                                                         Eukaryota; Metazoa;
Mammalia; Eutheria;
                    SEQUENCE FROM N.A.
                                                                                 Mus musculus (Mouse)
                                                                                               STK19 OR C4.
                                                                                                         Complement C4.
                                                                                                                                                                        070346
                                                                                                                                                                                                                                                                                                                                                    PRINTS; PRO0004; ANAPHYLATOXN.

Prodom; PD003264; ANATO; 1.

SMART; SM00104; ANATO; 1.

PROSITE; PS00477; ALPHA_2_MACROGLOBULIN; 1.

PROSITE; PS01177; ANAPHYLATOXIN_1; 1.

PROSITE; PS01178; ANAPHYLATOXIN_2; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STRAIN=B10.D2(C4(H)SLP(A));
MEDLINE=86176748; PubMed=3008092;
Hemenway C., Kalff M., Stavenhagen J.,
"Sequence comparison of alleles of the
(C4) and sex-limited protein (S1p).";
Nucleic Acids Res. 14:2539-2554(1986).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Q61372;
Q61372;
Hood L.;
          Rowen L., Qin S., Lasky
                                               NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   01-NOV-1996 (TREMBLrel. 01, Creator 01-NOV-1996 (TREMBLrel. 01, Last 01-MAR 2002 (TREMBLrel. 20, Last C4 complement protein (Fragment).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Eukaryota; Metazoa; Chordata; Mammalia; Eutheria; Rodentia;
                                                                                                                                                                                                                                    110
                                                                                                                                                                                                                                                                                                                                 SEQUENCE
                                                                                                                                                                                                                                                                                                                                           NON_TER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EMBL; X05314; CAA28936.1; HSSP; P01031; 1KJS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mus musculus (Mouse).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NCBI_TaxID=10090;
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                                                                                                                                                                                                                                                       1 CCYDG-ASVNNDETCEQRAAR 20
                                                                                                                                                                                                                               CCODGMTKLPMKRTCEORAAR 130
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                                                                                                                                                                                                                                                                                 l Similarity
12; Conserv
                                                                                                                                                                                                                                                                                                                                 1148 AA;
                                                                                                                                                                     PRELIMINARY;
                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRELIMINARY;
                                                         ; Chordata;
; Rodentia;
                                                                                                                                                                                                                                                                                          49.68;
                                                                                                                                                                                                                                                                                                                                127361 MW;
          S.R.,
                                                                                                                     Last annotation
                                                                                                                               Last sequence update)
                                                                                                                                             Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Created)
                                                                                                                                                                                                                                                                                          Score 56.5; DB Pred. No. 0.99;
                                                        Craniata; Veri
Sciurognathi;
          Loretz
                                                                                                                                                                     PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Craniata; Vertebrata; Euteleostomi; Sciurognathi; Muridae; Murinae; Mus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRT;
                                                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                                                                                             2710ECF832B6F0C9 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1148 AA
                                                                                                                                                                     1738 AA.
          С.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Walthall D., Robins D.; fourth component of complement
                                                                   Vertebrata;
          Dors
                                                                                                                                                                                                                                                                                                      DB 11;
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                                                                                                                                                                                                                                                                                                     Length 1148;
          Mahairas
                                                                                                                                                                                                                                                                               Indels
                                                                    Euteleostomi;
                                                         Murinae;
        G.,
                                                                                                                                                                                                                                                                             Gaps
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RX MEDLINE-20196006; PubMed-10731132;

RX MEDLINE-20196006; PubMed-10731132;

RA Andams M.D., Celniker S.E., Holt R.A., Evans C.A., Gocayne J.D.,

RA Andams M.D., Celniker S.E., Holt R.A., Evans C.A., Gocayne J.D.,

RA Andams M.D., Celniker S.E., Holt R.A., Hoskins R.A., Galle R.F.,

RA Andams M.D., Celniker S.E., Richards S., Ashburner M., Henderson S.N.,

RA George R.A., Lewis S.E., Richards S., Ashburner M., Henderson S.N.,

RA Sutton G.G., Wortman J.R., Yandell M.D., Zhang Q., Chen L.X.,

RA Burdon R.C., Rogers Y.-H.C., Blazej R.G., Champe M., Pfeiffer B.D.,

RA Burdon R.C., Rogers Y.-H.C., Blazej R.G., Champe M., Pfeiffer B.D.,

RA Ballew R.M., Basu A., Baxendale J., Andrews-pfannkoch C., Baldwin D.,

RA Bellew R.M., Basu A., Baxendale J., Bayraktaroglu L., Beasley E.M.,

RA Bellew R.M., Basu A., Baxendale J., Bayraktaroglu L., Beasley E.M.,

RA Bellew R.M., Basu A., Baxendale J., Brokstein P., Brottier P.,

RA Borkova D., Betchan M.R., Bouck J., Brokstein P., Brottier P.,

RA Burtis K.C., Busam D.A., Butler H., Cadieu E., Center A., Chandra I.,

RA Burtis K.C., Busam D.A., Butler H., Cadieu E., Center A., Chandra I.,

RA Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P.,

RA Dodson K., Doup L.E., Downes M., Dugan-Rocha S., Dunkov B.C., Dunn P.,

RA Dodson K., Doup L.E., Downes M., Dugan-Rocha S., Pleischmann W.,

RA Dodson K., Doup L.E., Garg N.S., Gelbart W.M., Glasser K.,

RA Glodek A., Gong F., Gorrell J.H., Gu Z., Guan P., Harris M.,

RA Glodek A., Gong F., Gorrell J.H., Gu Z., Guan P., Harris M.,

RA Hostin D., Houston K.A., Howland T.J., Wei M.H., IDegwam C.,

RA Lasko P., Lei Y., Levitsky A.A., Li J., Li Z., Liang Y., Lin X.,
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InterPro; IPRO01840; Anaphylatoxn.
InterPro; IPR001599; Macroglobina2.
InterPro; IPR001134; Netrin_C.
Pfam; PF00207; A2M_, 1.
Pfam; PF01835; A2M_, 1.
Pfam; PF01835; ANATO; 1.
Pfam; PF018759; NTR; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Drosophila melanogaster (Fruit fly).
Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta;
Epherygota; Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha;
Ephydroidea; Drosophilidae; Drosophila.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CG10055
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          01-MAY-2000 (TrEMBLrel. 13, 01-MAY-2000 (TrEMBLrel. 13, 01-JUN-2000 (TrEMBLrel. 14,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SMART; SM00104; ANATO; 1.
PROSITE; PS00477; ALPHA_2_MACROGLOBULIN;
PROSITE; PS01177; ANAPHYLATOXIN_1; 1.
PROSITE; PS01178; ANAPHYLATOXIN_2; 1.
SEQUENCE 1738 AA; 192944 MW; BDDB280;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STRAIN-BERKELEY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CG10055 protein.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Q9VI74
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRINTS; PR00004; ANAPHYLATOXN.
ProDom; PD003264; Anaphylatoxin; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Submitted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NCBI_TaxID=7227;
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MGD; MGI:88228; C4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        HSSP;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    700
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nes 12; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 CCYDG-ASVNNDETCEQRAAR 20
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
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57.18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Last annotation
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A Morkulov G., Milshina N.V., Mobarry C., Morris J., Moshrefi A.,
A Mount S.M., Moy M., Murphy B., Murphy L., Muzny D.M., Nelson D.L.,
A Nelson D.R., Nelson K.A., Nixon K., Nusskern D.R., Pacleb J.M.,
A Palazzolo M., Pittman G.S., Pan S., Pollard J., Puri V., Reese M.G.,
A Reinert K., Remington K., Sannders R.D.C., Scheeler F., Shen H.,
A Shue B.C., Siden-Kiamos I., Simpson M., Skupski M.P., Smith T:,
RA Syler E., Spradling A.C., Stapleton M., Strong R., Sun E.,
Sylrskas R., Tector C., Turner R., Venter E., Wang A.H., Wang X.,
RA Wang Z.-Y., Wassarman D.A., Weinstock G.M., Weisenbach J.,
RA Williams S.M., Woodage T., Weinstock G.M., Weisenbach J.,
RA Ye J., Yeh R.-F., Zaveri J.S., Zhan M., Zhang G., Zhao Q., Zheng L.,
RA Zheng X.H., Zhong F.N., Zhong W., Zhou X., Zhu X., Smith H.O.,
RA Zhong R.A., Myers E.W., Rubin G.M., Venter J.C.;
The genome sequence of Drosophila melanogaster.";
Science 287:2185-2195(2000).
EMBL; ABO03672; AAP54051.1; -.

EMBL; ABO03672; AAP54051.1; -.

ENBL; ABO037482; CG10055.
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Best Local S
Matches 8
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01.MAR-2001 (TrEMBLrel. 16, Last sequence update)
01.JUN-2002 (TrEMBLrel. 21, Last annotation update)
01.JUN-2002 (TrEMBLrel. 21, Last annotation update)
Complement component C3-3 (Fragment).
Oncorhynchus mykiss (Rainbow trout) (Salmo gairdneri).
Oncorhynchus mykiss (Rainbow trout) (Salmo gairdneri).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostei;
Actinopterygii; Neopterygii; Teleostei; Euteleostei;
Protacanthopterygii; Salmoniformes; Salmonidae; Oncorhynchus.
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Q98977;
                  PRINTS; PRO0004; ANAPHYLATOXN.
ProDom; PD003264; Anaphylatoxin; 1.
SMART; SM00104; ANATO; 1.
                                                                       Pfam; PF00207; A2M; 1. Pfam; PF01835; A2M_N; 1. Pfam; PF01821; ANATO; 1. Pfam; PF01759; NTR; 1.
                                                                                                                                                                                                                                                  Zarkadis I.K., Sarrias M.R., Sfyroera G., Sunyer J.O., Lambris "Cloning and structure of three rainbow trout C3 molecules: a plausible explanation for their functional diversity."; Dev. Comp. Immunol. 25:11-24(2001).
EMBL: U61753; AAC60015.2; -
                                                                                                                                                                                                                                                                                                                                                                                                                                  MEDLINE-96323260; PubMed-8710907;
Sunyer J.O., Zarkadis I.K., Sahu A., Lambr
"Multiple forms of complement of in trout
complement activators.";
                                                                                                                                         InterPro; IPR002890; A2M_N.
InterPro; IPR000200; Anaphylatoxin.
InterPro; IPR001840; Anaphylatoxn.
InterPro; IPR001599; MacrogloblnA2.
InterPro; IPR001134; Netrin_C.
                                                                                                                                                                                                                                                                                                                                            MEDLINE-20437839; PubMed-10980316;
                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
                                                                                                                                                                                                                                       HSSP; P01024;
                                                                                                                                                                                                                                                                                                                                                                                                                     Proc. Natl. Acad.
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8; Conserv
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ALPHA_2_MACROGLOBULIN;
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Pred. No.
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4.2;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                       that differ
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RESULT 6
Q9N497
ID Q9N4
AC Q9N4
RP SI
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Best Local
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01-OCT-2000 (TrEMBLrel. 15, Last sequence update)
01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
Hypothetical 60.1 kDa protein.
7110A2AL.2.
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Q9N497;
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PROSITE;
NON_TER
                                                  Q65686 PRELIMINARY; PRT; 135 AA.
Q55686;
Q1-NOV-1996 (TrEMBLrel. 01, Created)
Q1-NOV-1996 (TrEMBLrel. 01, Last sequence update)
Q1-DEC-2001 (TrEMBLrel. 19, Last annotation update)
Mypothetical 15.0 kDa protein.
                               Beet necrotic yellow vein virus
Viruses; ssRNA positive-strand v
                                                                                                                                                                                                                                                       "Direct Submission.";
Submitted (SEP-2001) to the EMBL/GenBank/DDBJ databases
EMBL; AC024746; AAF60400.1; -.
Hypothetical protein.
SEQUENCE 548 AA; 60123 MW; C63EC1D429E74989 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Caenorhabditis elegans
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                                                                                                                                                                                                                                                                                                                                                                                                                        "Genome sequence of the nematode C. elegans: a platform for investigating biology. The C. elegans Sequencing Consortium."; Science 282:2012-2018(1998).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STRAIN-BRISTOL N2;
MEDLINE-99069613;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Rhabditidae; Peloderinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Eukaryota; Metazoa;
 SEQUENCE FROM N.A.
                    NCBI_TaxID=31721;
                                                                                                                                                                                                                                                                                                              Waterston
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57.98;
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EMBL/GenBank/DDBJ
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RESULT 8
Q9DGS5
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O9DGS4;
O1-MAR-2001 (TrEMBLrel. 16, Created)
O1-MAR-2001 (TrEMBLrel. 16, Last sequence upda)
O1-MAR-2001 (TrEMBLrel. 16, Last annotation up Hypothetical 32.1 kDa protein.
Beet necrotic yellow vein virus.
Viruses; ssRNA positive-strand viruses, no DNA
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Best Local :
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Best Local
                           Koenig R., Lennefors B.L.;
"Molecular analyses of European A,
necrotic yellow vein virus and dett
Kazakhstan.";
Arch. Virol. 145:1561-1570(2000).
EMBL; AF197,548; AAG37084.1; -.
                                                                                                                                                           SEQUENCE FROM N.A.
STRAIN-F75, AND F72;
                                                                                                                                         MEDLINE=20456802; PubMed=11003469;
                                                                                                                                                                                                                   NCBI_TaxID=31721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Hypothetical protein. SEQUENCE 282 AA; 3
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Viruses; ssRNA positive-strand viruses,
NCBI_TaxID=31721;
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01-MAR-2001 (TrEMBLrel. 16, La
01-MAR-2001 (TrEMBLrel. 16, La
Hypothetical 32.1 kDa protein.
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"Molecular analyses of European A,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STRAIN=KAS3, AND KAS2;
MEDLINE=20456802; PubMed=11003469;
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AF197557; AAG37097.1; -
AF197554; AAG37090.1; -
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Pred. No.
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rare P type in
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O9DS75;
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O1-MAR-2001 (TrEMBLrel. 16, Last s
O1-MAR-2001 (TrEMBLrel. 16, Last s
Hypothetical 32 0 kDa protein.
Beet necrotic yellow vein virus.
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Best Local S
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                                                                                   Hypothetical protein. SEQUENCE 282 AA; 32024 MW;
                                                                                                                                   Kazakhstan.";
Arch. Virol. 145:1561-1570(2000).
                                                                                                                               EMBL;
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                                                                                                                                                                                                                                                        STRAIN-I12;
                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                      NCBI_TaxID=31721;
                                                                                                                                                                                                                                                                                                                         Viruses;
                                                                                                                                                                                                                                    MEDLINE=20456802;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EMBL; at Hypothetical protect 282 AA;
                                                                                                                                                                                         Molecular analyses of European A, B and P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Koenig R., Lennefors B.L.;

"Molecular analyses of European A, B and P type sources of Beet
"morrofic vellow vein virus and detection of the rare P type in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EMBL; AF19754
Hypothetical
SEQUENCE 28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Arch. Virol. 145:1561-1570(2000).
EMBL; AF197544; AAG37076.1; -.
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NCBI_TaxID=31721;
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01-MAR-2001 (TrEMBLrel. 16, La
01-MAR-2001 (TrEMBLrel. 16, La
Hypothetical 31.9 kDa protein.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Q9DS85
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  115 CYSGVDVLSDELCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Local Similarity es 8; Conserv
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CYSGYDYLSDELCE
                                                                                                                        AF197552; AAG37088.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AF197546; AAG37078.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8; Conserv
                                                                                                                                                                                                                                                                                                                     ssRNA positive-strand viruses,
                  Conservative
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282 AA; 32053 MW;
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                                                                                                                                                                                                                                PubMed=11003469;
                             42.18;
57.18;
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57.1%;
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57.1%;
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           Score 48; DB Pred. No. 5.9; 1; Mismatches
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Pred. No.
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                                                                                 A463D478D475CF05 CRC64;
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Pred. No.
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7.9;
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5.9;
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                                              Length 282;
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Best Local
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01-NOV-1996
01-MAR-2001
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Q9DS67;
01-MAR-2001
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Q65670;
Submitted (FEB-1999) to the EMBL/GenBank/DDBJ databases. EMBL; D84413; BAA12347.1; -. EMBL; AJ239199; CAA15427.1; -.
                                                                                                                                                                               Yu J., Han C., Yang L., Li D., Liu Y.; "CDNA cloning, sequencing and expression yellow vein virus.";
                                                                                                                                                                                                                                                                                                                                                                   MEDLINE-97128991; PubMed-8973531;
Saito M., Kiguchi T., Kusume T., Tamada T.;
"Complete nucleotide sequence of the Japanese
necrotic yellow vein virus RNA and comparison
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  31K protein.

Beet necrotic yellow vein virus.
                                                                                                STRAIN-C;
                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                         necrotic yellow vein isolates.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Viruses; ssRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Hypothetical protein SEQUENCE 282 AA;
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Viruses; ssRNA positive-strand viruses,
NCBI_TaxID-31721;
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01-MAR-2001 (TrEMBLrel. 16, Last sequence update)
01-MAR-2001 (TrEMBLrel. 16, Last annotation update)
Hypothetical 31.9 kDa protein.
                                                                                                                    SEQUENCE FROM
                                                                                                                                                                                                                                                              STRAIN-C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EMBL; AF197559; AAG37099.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Kazakhstan.";
Arch. Virol. 145:1561-1570(2000).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Roenig R., Lennefors B.L.;
"Molecular analyses of European A, B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MEDLINE-20456802;
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                                                                                                                                                             Microbiol, Sin.
                                                                                                                                                                                                                                                                                                                              Virol. 141:2163-2175(1996).
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Similarity 57.1%;
8; Conservation
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                                                                                                                    N.A.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 31948 MW;
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Last sequence update)
Last annotation updat
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                                                                                                                                                                                                     of RNA4 from beet necrotic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DNA stage;
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Best Local
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Best Local
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                                                                                                      Q9GTY7;
                                          01-MAR-2001 (TrEMBLrel. 16, Created)
01-MAR-2001 (TrEMBLrel. 16, Last sequence update)
01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
Ookinete surface antigen-like protein Pfs28.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Q9DDV9;
01-MAR-2001 (TrEMBLrel. 16, Created)
01-MAR-2001 (TrEMBLrel. 16, Last sequence update)
01-JUN-2002 (TrEMBLrel. 21, Last annotation update)
01-JUN-2002 (TrEMBLrel. 21, Last annotation update)
Complement component C3-4 (Fragment).
                   Plasmodium yoelii nigeriensis.
Eukaryota; Alveolata; Apicomplexa; Haemosporida; Plasmodium
                                                                                                                                                                                                                                                                                                         NON_TER
                                                                                                                                                                                                                                                                                                                                              Prodom; PD003264; Anaphylatoxin; 1.
SMART; SM00104; ANATO; 1.
PROSITE; PS00477; ALPHA_2_MACROGLOBULIN;
PROSITE; PS01177; ANAPHYLATOXIN_1; 1.
PROSITE; PS01178; ANAPHYLATOXIN_2; 1.
           NCBI_TaxID=31274;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Zarkadis I.K., Sarrias M.R., Sfyroera G., Sunyer J.O., Lambris J.D., "Cloning and structure of three rainbow trout C3 molecules: a plausible explanation for their functional diversity."; Dev. Comp. Immunol. 25:11-24(2001).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Oncorhynchus mykiss (Rainbow trout) (Salmo gairdneri).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Eu
Actinopterygii; Neopterygii; Teleostei; Euteleostei;
Protacanthopterygii; Salmoniformes; Salmonidae; Oncorh
                                                                                                                                                                                                                                                                                                                                                                                                                 Pfam; PF00207; A2M; 1.
Pfam; PF01835; A2M_N; 1.
Pfam; PF01821; ANATO; 1.
Pfam; PF01759; NTR; 1.
                                                                                                                                                                                                                                                                                              SEQUENCE
                                                                                                                                                                                                                                                                                                                                  PROSITE; PS00030; RRM_RNP_1; UNKNOWN_1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  InterPro; IPR000020; Anaphylatoxin InterPro; IPR001599; MacroglobinA2 InterPro; IPR001134; Netrin_C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EMBL; AF271080; AAG40610.1; -. HSSP; P01024; 1C3D.
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                                                                                                                                                                                      717
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      InterPro; IPR000504; RNA_rec_mot.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            InterPro; IPR002890; A2M_N.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MEDLINE=20437839; PubMed=10980316;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NCBI_TaxID=8022;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    115 CYSGVDVLSDELCE 128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Local Similarity hes 8; Conserv
                                                                                                                                                                                                   1 CCYDGASVNN--DETCEQRA 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2 CYDGASVNNDETCE
                                                                                                                                                                                     CCMDGMR-NNILDYTCERRS 735
                                                                                                                                                                                                                                         l Similarity
11; Conserv
                                                                                                                                                                                                                                                                                          1684 168
1684 AA;
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                                                                                                                   PRELIMINARY;
                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRELIMINARY;
                                                                                                                                                                                                                                                                                                         1684
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                                                                                                                                                                                                                                                 41.7%;
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57.18;
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                                                                                                                                                                                                                                                    Score 47.5;
Pred. No. 4
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Pred. No. 5
                                                                                                                                                                                                                                    red. No. 49;
Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              D96AA3B079E063E6 CRC64;
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                                                                                                                                                                                                                                                                                           903802CAAAE4D20D CRC64;
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                                                                                                                 227
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                                                                                                                Å
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Vertebrata; Euteleostomi;
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                                                                                                                                                                                                                                                                DB 13;
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Minimum DB seq length: 0
Maximum DB seq length: 2000000000
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Perfect score:
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Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A_Geneseq_101002:*
1: /SIDSZ/gcgdata/g;
2: /SIDSZ/gcgdata/g;
3: /SIDSZ/gcgdata/g;
4: /SIDSZ/gcgdata/g;
5: /SIDSZ/gcgdata/g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BLOSUM62
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                908470 seqs, 133250620 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gapop 10.0 , Gapext 0.5
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114
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| SIDS2/gcgdata/geneseq/geneseqp-emb1/AA1981 DAT: *
| SIDS2/gcgdata/geneseq/geneseqp-emb1/AA1982 DAT: *
| SIDS2/gcgdata/geneseq/geneseqp-emb1/AA1983 DAT: *
| SIDS2/gcgdata/geneseq/geneseqp-emb1/AA1984 DAT: *
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| SIDS2/gcgdata/geneseq/geneseqp-emb1/AA1993 DAT: *
| SIDS2/gcgdata/geneseq/geneseqp-emb1/AA1995 DAT: *
| SIDS2/gcgdata/geneseq/geneseqp-emb1/AA199 DAT: *
| SIDS2/gcgdata/geneseq/geneseqp-emb1/AA2000 DAT: *
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                                                                                                                                                                                                                                                                                                                                                                                                                SUMMARIES
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114	114	114	114	114	114	114	114	114	114	Score	
100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	Query Match	æ
71	71	70	69	68	67	66	65	64	20	Query Match Length DB	
18	18	18	10	18	18	18	18	18	22	DB	
AAW07783	AAW07782	AAW07790	AAW07789	AAW07788	AAW07787	AAW07786	AAW07785	AAW07784	AAB74055	ID	
-	Human complement	_	_		Human complement		Human complement		Human C5a peptide	Description	

4 4 3 5 4 3	41 42	 	37	ω ω 4 τυ <i>α</i>	ω	3 2 3 2	30	29	28	27	) ) ) ()	24	23	22	21	20	19	18	17	16	15	14	<u>1</u> 3	12	11
91 89 88	9994	999	9 6	101	105	106	108	108	109	109	109	109	109	109	110	110	110	110	110	110	111	114	114	114	114
	81.6	82.5	84.2	88.6	92.1	93.0	94.7	94.7	95.6	95.6	95.6	95.6	95.6	95.6	96.5	96.5	96.5	96.5	96.5	96.5	97.4	100.0	100.0	100.0	100.0
15 17 77	74 74	18 74	16	17	19	18 18	20	N .	1676	74	74	74	20	19	74	20	20	20	20	20	20	74		71	
222	222	222	22	222	22	2 2	22	22	16	2 0	16	œ	22	22	22	22	22	22	22	22	22	22	18	18	18
AAB74101 AAB74104 AAE05458	AAB/405/ AAE05455 AAB74058	AAB74103 AAE05456	AAB74117 AAB74100	AAB74109 AAB74099	AAB74102	AAB74115 AAB74098	AAB74108	AAB74107	AAR77604	AAE05454	AAR75497	AAP71666	AAB74120	AAB74097	AAB74119	AAB74116	AAB74114	AAB74113	AAB74112	AAB74110	AAB74111	AAB74053	AAW07792	AAW07791	AAW07804
C-terminal truncat C-terminal truncat Mouse C5a anaphyla	Pig C5a anaphylato Porcine C5a. Sus	nal trunca anaphylat	C-terminal truncat C-terminal truncat	C-terminal truncat	<u>,                                     </u>	C-terminal truncat	terminal		Pro-C5 polypeptide	Human CSa anaphyla	Human C5a protein.	Human anaphylatoxi			3	Η.	terminal	terminal	_	_	C-terminal truncat		Human complement C	Human complement C	Human complement C

#### ALIGNMENTS

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RESULT 1
AAB74055
ID AAB7
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Human; C5a; complement; antibody; bacterial infection; sinusitis; meningitis; respiratory; gastrointestinal; urinary tract infection; wound; anaphylatoxin; sepsis.
Compositions for treating blood-borne and toxin mediated diseases and treatment of sepsis in humans and other animals comprises anti-C5a
                                                                    N-PSDB; AAF75793.
                                                                                                                                  Ward PA, Huber-Lang M,
                                                                                                                                                                                  (UNMI ) UNIV MICHIGAN.
                                                                                                                                                                                                                               31-AUG-1999;
                                                                                                                                                                                                                                                                       31-AUG-2000; 2000WO-US24219
                                                                                                                                                                                                                                                                                                                         08-MAR-2001.
                                                                                                                                                                                                                                                                                                                                                                    WO200115731-A1.
                                                                                                                                                                                                                                                                                                                                                                                                             Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Human C5a peptide fragment #2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            16-MAY-2001 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAB74055;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAB74055 standard; Peptide; 20
                                                                                            2001-226665/23.
                                                                                                                                                                                                                               99US-0387671.
                                                                                                                                       Sarma
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RESULT 2
AAW07784
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local
                                                                                                                                           05-JUN-1995;
05-JUN-1995;
05-JUN-1995;
         inflammatory conditions
                      New human complement C5a antagonists, partic. for
                                                                                        Schmitz A,
                                                                                                                 (CIBA ) CIBA GEIGY AG.
                                                                                                                                                                                                 04-JUN-1996;
                                                                                                                                                                                                                                                                                          Misc-difference
                                                                                                                                                                                                                                                                                                                 Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                             Human; complement; C5a; derivative; receptor; antagonist; trauma; treatment; prevention; disease; inflammation; pneumonitis; burn; adult respiratory distress syndrome; ARDS; pulmonary; injury; post myocardial; infarction; inflammatory bowel; endotoxic shock; rheumatoid arthritis; psoriasis; sepsis; transplant rejection; immunosuppressive therapy; blood transfusion; dysfunction;
                                                                                                                                                                                                                          12-DEC-1996
                                                                                                                                                                                                                                                                                                                                             Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                The present sequence is a peptide fragment of human complement component C5a (the full-length sequence is given in AAB74053). The present invention relates to an antibody specific for the present sequence. The C5a-antibody can be used in a therapeutic composition, which is useful for treating a subject suffering from bacterial infection, e.g. sinusitis, meningitis, respiratory, gastrointsstinal or urinary tract infections or infections in wounds. In addition, the C5a antibody can be used for treating sepsis. C5a is also known as anaphylatoxin.
                                                                                                                                                                                                                                                                                                                                                                                   Synthetic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Human complement C5a protein derivative analogue 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAW07784 standard; protein; 64 AA
                                                                                                                                                                                                                                                                                                                                                                                                Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                   haemodialysis; leukopheresis; prophylaxis; reperfusion.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       01-SEP-1997 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAW07784;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Claim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  antibodies generated against C-terminal truncated C5a peptides
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 CCYDGASVNNDETCEQRAAR 20
                                                            1997-043125/04.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8; Page 26; 84pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Similarity
                                                                                       Van Heeke G,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 20 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                          95US-0463377.
95US-0462648.
95US-0463224.
                                                                                                                                                                                              96WO-EP02422
                                                                                                                                                                                                                                                                                                                  /note=
27
                                                                                                                                                                                                                                                                                        /note= "wild type Cys replaced by Ser" 64
                                                                                                                                                                                                                                                                                                                                              Location/Qualifiers
                                                                                                                                                                                                                                                                     /note= "wild type Asn replaced by Cys"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         100.0%;
                                                                                                                                                                                                                                                                                                                        "wild type Thr replaced by Met"
                poly-peptide derivs. - used as treating C5a-mediated diseases
                                                                                       Van Oostrum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 114;
Pred. No. 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1; DB 22;
. 4.5e-11;
ches 0;
                             - used as
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length
                               C5a receptor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    20;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
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XX XX PF PR PR PR PR PR PR PR
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AAW07785
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
                                  05-JUN-1995;
05-JUN-1995;
05-JUN-1995;
                                                                                                                                                                                                                                                                                                                                                                                              Human; complement; C5a; derivative; receptor; antagonist; trauma; treatment; prevention; disease; inflammation; pneumonitis; burn; adult respiratory distress syndrome; ARDS; pulmonary; injury; post myocardial; infarction; inflammatory bowel; endotoxic shock; rheumatoid arthritis; psoriasis; sepsis; transplant rejection; immunosuppressive therapy; blood transfusion; dysfunction; haemodialysis; leukopheresis; prophylaxis; reperfusion.
(CIBA ) CIBA GEIGY AG
                                                                                                        04-JUN-1996;
                                                                                                                                                                                                                              Misc-difference
                                                                                                                                         12-DEC-1996
                                                                                                                                                                            WO9639503-A1
                                                                                                                                                                                                                                                                 Misc-difference
                                                                                                                                                                                                                                                                                                                                                         Synthetic.
                                                                                                                                                                                                                                                                                                  Misc-difference
                                                                                                                                                                                                                                                                                                                                                                          Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Human complement C5a protein derivative analogue 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAW07785 standard; protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  01-SEP-1997 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Antibodies against the derivative can be used to detect or quantify the derivative and modify, e.g. neutralise, its activity in vivo. N.B. Sequence not given in specification, but constructed using the wild type sequence given on pages 51-52.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   disease, rheumatoid arthritis, psoriasis, endotoxic shock, sepsis, severe trauma and burns. It can also be used to treat patients suffering from transplant rejection, receiving immunosuppressive therapy or massive blood transfusion, exposed to medical devices or experiencing pulmonary dysfunction following haemodialysis or leukopheresis. It can also be used as a prophylactic, particularly in conditions caused by reperfusion, e.g. reperfusion following ischaemia, and circulatory contact with medical devices, as well as
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                The present sequence, the human complement C5a derivative 1-64, ThrIMET, Cys27Ser, Asn64Cys, is a C5a receptor antagonist which exhibits no agonist activity. It can be used to treat or prevent C5a mediated diseases or inflammation, e.g. pneumonitis, adult respiratory distress syndrome (ARDS), pulmonary inflammatory boy injury, post myocardial infarction inflammation, inflammatory boy disease, rheumatoid arthritis, psoriasis, endotoxic shock, sepsis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          to prevent transplant rejection.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Example 3; Page -; 93pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             21 CCYDGASVNNDETCEQRAAR 40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 CCYDGASVNNDETCEQRAAR 20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     20;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       64 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                               95US-0463377.
95US-0462648.
95US-0463224.
                                                                                                       96WO-EP02422
                                                                                                                                                                                                                                /note= "wild type Cys replaced by Ser" 65
                                                                                                                                                                                                                                                               /note= "wild type Thr replaced 27
                                                                                                                                                                                                        /note= "wild type Ile replaced by Cys"
                                                                                                                                                                                                                                                                                                                 Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 114; DB 18;
Pred. No. 1.6e-10;
0; Mismatches 0;
                                                                                                                                                                                                                                                                              bу
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 inflammatory bowel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
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RESULT 4
AAW07786
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             disease, rheumatoid arthritis, psoriasis, endotoxic shock, sepsis, severe trauma and burns. It can also be used to treat patients suffering from transplant rejection, receiving immunosuppressive therapy or massive blood transfusion, exposed to medical devices or experiencing pulmonary dysfunction following haemodialysis or leukopheresis. It can also be used as a prophylactic, particularly in conditions caused by reperfusion, e.g. reperfusion following ischaemia, and circulatory contact with medical devices, as well as to prevent transplant rejection.

Antibodies against the derivative can be used to detect or quantify the derivative and modify, e.g. neutralise, its activity in vivo.

N.B. Sequence not given in specification, but constructed using the wild type sequence given on pages 51-52.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               The present sequence, the human complement C5a derivative 1-65, ThriMet, Cys27Ser, Ile65Cys, is a C5a receptor antagonist which exhibits no agonist activity. It can be used to treat or prevent C5a mediated diseases or inflammation, e.g. pneumonitis, adult respiratory distress syndrome (ARDS), pulmonary inflammation or injury, post myocardial infarction inflammation, inflammatory bowel
             WO9639503-A1
                                                             Misc-difference
                                                                                           Misc-difference
                                                                                                                                                                           Synthetic
                                                                                                                                                                                                                     treatment; prevention; disease; inflammation; pneumonitis; burn; adult respiratory distress syndrome; ARDS; pulmonary; injury; post myocardial; infarction; inflammatory bowel; endotoxic shock; rheumatoid arthritis; psoriasis; sepsis; transplant rejection; immunosuppressive therapy; blood transfusion; dysfunction; haemodialysis; leukopheresis; prophylaxis; reperfusion.
                                                                                                                                                                                                                                                                                                                                                                                          01-SEP-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 New human complement C5a poly-peptide derivs. - used as C5a receptor antagonists, partic. for treating C5a-mediated diseases and inflammatory conditions
                                                                                                                          Misc-difference
                                                                                                                                                                                                                                                                                                               Human; complement; C5a; derivative; receptor; antagonist; trauma;
                                                                                                                                                                                                                                                                                                                                                     Human complement C5a protein derivative analogue 3.
                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAW07786 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Example 3; Page -; 93pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Schmitz A,
                                                                                                                                                                                          iomo sapiens
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 CCYDGASVNNDETCEORAAR 20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CCYDGASVNNDETCEQRAAR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1997-043125/04
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      65 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Van Heeke G,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                       (first entry)
                                                      /note-
                                                                                           /note=
27
                                                                                                                                       Location/Qualifiers
                                            /note-
                                                                                                                                                                                                                                                                                                                                                                                                                                                       protein; 66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       100.0%;
                                        "wild type Ser replaced
                                                                       "wild type Cys replaced by Ser"
                                                                                                         "wild type Thr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Van Oostrum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 114; DB 18;
Pred. No. 1.6e-10;
; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                         B
                                                                                                         replaced
                                          γď
                                                                                                       bу
                                                                                                       Met"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 65;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
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RESULT 5
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Best
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        05-JUN-1995;
05-JUN-1995;
05-JUN-1995;
                                                                                                                                                                                                                             Human; complement; C5a; derivative; receptor; antagonist; trauma; treatment; prevention; disease; inflammation; pneumonitis; burn; adult respiratory distress syndrome; ARDS; pulmonary; injury; post myocardial; infarction; inflammatory bowel; endotoxic shock;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    suffering from transplant rejection, receiving immunosuppressive therapy or massive blood transfusion, exposed to medical devices or experiencing pulmonary dysfunction following haemodialysis or leukopheresis. It can also be used as a prophylactic, particularly in conditions caused by reperfusion, e.g. reperfusion following ischaemia, and circulatory contact with medical devices, as well as to prevent transplant rejection.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                The present sequence, the human complement C5a derivative 1-66, ThriMet, Cys/7Ser, Ser6Cys, is a C5a receptor antagonist which exhibits no agonist activity. It can be used to treat or prevent C5a mediated diseases or inflammation, e.g. pneumonitis, adult respiratory distress syndrome (ARDS), pulmonary inflammation or injury, post myocardial infarction inflammation, inflammatory bowel
                                                        Synthetic.
                                                                                                                                                                                                                                                                                                                                                                                          Human complement C5a
                                                                                                                                                                                                                                                                                                                                                                                                                                                      01-SEP-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAW07787 standard; protein; 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  the derivative and modify, e.g. neutralise, N.B. Sequence not given in specification, bu wild type sequence given on pages 51-52.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       disease, rheumatoid arthritis, psoriasis, endotoxic shock, sepsis, severe trauma and burns. It can also be used to treat patients
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                antagonists, partic. for inflammatory conditions
                                                                                     Homo sapiens
                                                                                                                                          haemodialysis;
                                                                                                                                                                 rheumatoid arthritis; psoriasis; sepsis; transplant rejection; immunosuppressive therapy; blood transfusion; dysfunction;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         New human complement C5a poly-peptide derivs. - used as C5a annagonists, partic, for treating C5a-mediated diseases and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WPI; 1997-043125/04.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   04-JUN-1996;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Antibodies against the derivative can be used to detect or quantify
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               12-DEC-1996
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (CIBA ) CIBA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                21
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 CCYDGASVNNDETCEQRAAR 20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CCYDGASVNNDETCEQRAAR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            66 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Van Heeke G,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GEIGY AG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     95US-0463377.
95US-0462648.
95US-0463224.
                                                                                                                                          leukopheresis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   96WO-EP02422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              100.0%;
                                                                                                                                                                                                                                                                                                                                                                                    protein derivative analogue 4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Van Oostrum J;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                          prophylaxis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 114; DB 18; Pred. No. 1.7e-10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  but constructed using
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              its activity in vivo.

    used as C5a receptor

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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
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Location/Qualifiers

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XX AC 
                                                                                                                                                                                                                                                                                                                                    RESULT 6
AAW07788
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
        Human; complement; C5a; derivative; receptor; antagonist; trauma; treatment; prevention; disease; inflammation; pneumonitis; burn; adult resparatory distress syndrome; ARDS; pulmonary; injury;
                                                                                                                        Human complement C5a protein derivative analogue
                                                                                                                                                                                             01-SEP-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    disease, rheumatoid arthritis, psoriasis, endotoxic shock, sepsis, severe trauma and burns. It can also be used to treat patients suffering from transplant rejection, receiving immunosuppressive therapy or massive blood transfusion, exposed to medical devices or experiencing pulmonary dysfunction following haemodialysis or leukopheresis. It can also be used as a prophylactic, particularly is conditions caused by reperfusion, e.g. reperfusion following ischaemia, and circulatory contact with medical devices, as well as
                                                                                                                                                                                                                                                       AAW07788;
                                                                                                                                                                                                                                                                                            AAW07788 standard; protein; 68
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  The present sequence, the human complement C5a derivative 1-67, ThriMet, Cys77Ser, His67Cys, is a C5a receptor antagonist which exhibits no agonist activity. It can be used to treat or prevent C5a mediated diseases or inflammation, e.g. pneumonitis, adult respiratory distress syndrome (ARDS), pulmonary inflammation or injury, post myocardial infarction inflammation, inflammatory bowel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             the derivative and modify, e.g. neutralise, its activity in vivo. N.B. Sequence not given in specification, but constructed using the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Antibodies against the derivative can be used to detect or quantify the derivative and modify, e.g. neutralise, its activity in vivo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  to prevent transplant rejection.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Example 3; Page -; 93pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 antagonists,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       inflammatory conditions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WPI; 1997-043125/04.
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05-JUN-1995;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /note=
Misc-difference 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Schmitz A,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (CIBA ) CIBA GEIGY AG.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         05-JUN-1995;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                  21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 CCYDGASVNNDETCEQRAAR 20
                                                                                                                                                                                                                                                                                                                                                                                                                                         CCYDGASVNNDETCEQRAAR 40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 type sequence given on pages 51-52.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            20;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   complement C5a poly-peptide derivs. - used as ts, partic. for treating C5a-mediated diseases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                     (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Van Heeke G,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ĀĀ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                95US-0463377.
95US-0462648.
95US-0463224.
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27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /note=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             100.0%;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      "wild type Cys replaced by Ser"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Van Oostrum J;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 114; DB 18;
Pred. No. 1.7e-10;
                                                                                                                                                                                                                                                                                                  A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
ARDS; pulmonary; injury;

    used as C5a receptor

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    67;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
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AAW07789 ID AAW( XX RESULT

AAW07789 standard; protein; 69 AA.

В Qγ

CCYDGASVNNDETCEQRAAR 40

0;

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PF
YX
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                                                                          Query Match
Best Local (
                                                                                                                                                                                                                         disease, rheumatoid arthritis, psoriasis, endotoxic shock, sepsis, severe trauma and burns. It can also be used to treat patients suffering from transplant rejection, receiving immunosuppressive therapy or massive blood transfusion, exposed to medical devices or experiencing pulmonary dysfunction following haemodialysis or leukopheresis. It can also be used as a prophylactic, particularly in conditions caused by reperfusion, e.g. reperfusion following ischaemia, and circulatory contact with medical devices, as well as
                                                                                                                        Sequence
                                                                                                                                                         to prevent transplant rejection.

Antibodies against the derivative can be used to detect or quantify the derivative and modify, e.g. neutralise, its activity in vivo.

N.B. Sequence not given in specification, but constructed using the
                                                                                                                                                                                                                                                                                                                                                    The present sequence, the human complement C5a derivative 1-68, Thr1Met, Cys27Ser, Lys68Cys, is a C5a receptor antagonist which exhibits no agonist activity. It also be used to treat or prevent C5a mediated diseases or inflammation, e.g. pneumonitis, adult respiratory distress syndrome (ARDS), pulmonary inflammation or injury, post myocardial infarction inflammation, inflammatory bowel
                                                                                                                                                    wild type sequence given on pages 51-52.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Example 3; Page -; 93pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      New human complement C5a antagonists, partic. for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WPI; 1997-043125/04.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          inflammatory conditions
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    05-JUN-1995;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Misc-difference
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              post myocardial; infarction; inflammatory bowel; endotoxic shock; rheumatoid arthritis; psoriasis; sepsis; transplant rejection; immunosuppressive therapy; blood transfusion; dysfunction;
21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 haemodialysis; leukopheresis; prophylaxis; reperfusion.
                       1 CCYDGASVNNDETCEORAAR 20
                                                                           Similarity
                                                                                                                         68 AA;
                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Van Heeke
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                95US-0463377.
95US-0462648.
95US-0463224.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /note= "wild type Thr replaced by Met" 27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note= "wild type Lys replaced by Cys"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Location/Qualifiers
                                                                        100.0%;
100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ó
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               poly-peptide derivs. - used as C5a receptor treating C5a-mediated diseases and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Van Oostrum J;
                                                       0;
                                                                   Score 114; DB 18;
Pred. No. 1.7e-10;
                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       þу
                                                      Indels
                                                                                  Length
                                                                                                                                                                                                                               as well as
                                                    0;
                                                    Gaps
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AAW07789;

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exhibits no agonist activity. It can be used to treat or prevent
C5a mediated diseases or inflammation, e.g. pneumonitis, adult
respiratory distress syndrome (ARDS), pulmonary inflammation or
injury, post myocardial infarction inflammation, inflammatory bowel
disease, rheumatoid arthritis, psoriasis, endotoxic shock, sepsis,
severe trauma and burns. It can also be used to treat patients
suffering from transplant rejection, receiving immunosuppressive
therapy or massive blood transfusion, exposed to medical devices
or experiencing pulmonary dysfunction following haemodialysis or
leukopheresis. It can also be used as a prophylactic, particularly
in conditions caused by reperfusion, e.g. reperfusion following
ischaemia, and circulatory contact with medical devices, as well as
to prevent transplant rejection.
                       Query Match
Best Local :
        Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               05-JUN-1995;
05-JUN-1995;
05-JUN-1995;
                                                                    Sequence
                                                                                           Antibodies against the derivative can be used to detect or quantify the derivative and modify, e.g. neutralise, its activity in vivo. N.B. Sequence not given in specification, but constructed using the wild type sequence given on pages 51-52.
                                                                                                                                                                                                                                                                                                                                                                 The present sequence, the human complement C5a derivative 1-69, ThriMet, Cys27Ser, Asp69Cys, is a C5a receptor antagonist which
                                                                                                                                                                                                                                                                                                                                                                                                                   Example 3; Page -; 93pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 New human complement C5a antagonists, partic, for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Schmitz A,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              12-DEC-1996.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              treatment; prevention; disease; inflammation; pneumonitis; burn; adult respiratory distress syndrome; ARDS; pulmonary; injury; post myocardial; infarction; inflammatory bowel; endotoxic shock; rheumatoid arthritis; psoriasis; sepsis; transplant rejection; immunosuppressive therapy; blood transfusion; dysfunction;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            04-JUN-1996;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WO9639503-A1
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Synthetic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Human complement C5a protein derivative analogue 6.
                                                                                                                                                                                                                                                                                                                                                                                                                                                    inflammatory conditions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (CIBA ) CIBA GEIGY AG.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     haemodialysis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  01-SEP-1997
                   Local Similarity
      20;
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                                                                    69
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      Conservative
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95US-0462648.
95US-0463224.
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? 27
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /note= "wild type Cys
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /note- "wild type Asp replaced by Cys"
                100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    "wild type Thr replaced by Met"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   poly-peptide derivs. - used as C5a receptor
treating C5a-mediated diseases and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Van
    0
 Score 114; DB 18;
Pred. No. 1.8e-10;
); Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Oostrum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ive; receptor; antagonist; trauma;
inflammation; pneumonitis; burn;
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                               Length
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Gaps
0;
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RESULT 8
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05-JUN-1995;
05-JUN-1995;
                                         disease, rheumatoid arthritis, psoriasis, endotoxic shock, sepsis, severe trauma and burns. It can also be used to treat patients suffering from transplant rejection, receiving immunosuppressive therapy or massive blood transfusion, exposed to medical devices or experiencing pulmonary dysfunction following haemodialysis or leukopheresis. It can also be used as a prophylactic, particularly in conditions caused by reperfusion, e.g. reperfusion following ischaemia, and circulatory contact with medical devices, as well as
                                                                                                                                                                      exhibits no agonist activity. It can be used to treat or prevent C5a mediated diseases or inflammation, e.g. pneumonitis, adult respiratory distress syndrome (ARDS), pulmonary inflammation or injury, post myocardial infarction inflammation, inflammatory bowel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         adult respiratory distress syndrome: ARDS; pulmonary; injury; post myocardial; infarction; inflammatory bowel; endoctoxic sho rheumatoid arthritis; psoriasis; sepsis; transplant rejection; immunosuppressive therapy; blood transfusion; dysfunction;
              Antibodies against the derivative can be used to detect or quantify
                               to prevent transplant rejection.
                                                                                                                                                                                                                                 The present sequence, the human complement C5a derivative 1-70, ThriMet, Cys27Ser, Met70Cys, is a C5a receptor antagonist which
                                                                                                                                                                                                                                                                                  Example 3; Page -; 93pp; English.
                                                                                                                                                                                                                                                                                                                                New human complement C5a antagonists, partic. for
                                                                                                                                                                                                                                                                                                                                                                                WPI; 1997-043125/04.
                                                                                                                                                                                                                                                                                                                                                                                                              Schmitz A, Van Heeke
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           04-JUN-1996;
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                                                                                                                                                                                                                                                                                                                  inflammatory conditions
                                                                                                                                                                                                                                                                                                                                                                                                                                             (CIBA ) CIBA GEIGY AG.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          12-DEC-1996.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Human;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Human complement C5a protein derivative analogue 7.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          treatment; prevention; disease; inflammation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                21 CCYDGASVNNDETCEQRAAR 40
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      complement; C5a; derivative; receptor;
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95US-0462648.
95US-0463224.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                'note= "wild type Cys replaced by Ser"
modify, e.g. neutralise, its activity in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   protein; 70 AA
                                                                                                                                                                                                                                                                                                                                                                                                              G,
                                                                                                                                                                                                                                                                                                                                poly-peptide derivs. - used as C5a
treating C5a-mediated diseases and
                                                                                                                                                                                                                                                                                                                                                                                                              Van Oostrum
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RESULT 9
AAW07782
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                       The present sequence, the human complement C5a derivative 1-71, ThrIGIY, Cys27Ser, Gln7lCys, is a C5a receptor antagonist which exhibits no agonist activity. It can be used to treat or prevent C5a mediated diseases or inflammation, e.g. pneumonitis, adult respiratory distress syndrome (ARDS), pulmonary inflammation or injury, post myocardial infarction inflammation, inflammatory bowel
disease, rheumatoid arthritis, psoriasis, endotoxic shock, sepsevere trauma and burns. It can also be used to treat patients
                                                                                                                     Claim 11; Page -; 93pp; English.
                                                                                                                                                   New human complement C5a antagonists, partic. for inflammatory conditions
                                                                                                                                                                                                        WPI; 1997-043125/04.
                                                                                                                                                                                                                                   Schmitz A, Van Heeke G,
                                                                                                                                                                                                                                                                                        05-JUN-1995;
05-JUN-1995;
                                                                                                                                                                                                                                                              (CIBA ) CIBA GEIGY AG.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          haemodialysis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Human; complement; C5a;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAW07782 standard;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence not given in specification, but constructed using the type sequence given on pages 51-52.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       20;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         70 AA;
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                                                                                                                                                                                                                                                                                      95US-0463377.
95US-0462648.
95US-0463224.
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. 71
                                                                                                                                                                                                                                                                                                                                           96WO-EP02422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     leukopheresis; prophylaxis; reperfusion.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /note= "wild type Thr
27
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                                                                                                                                                                                                                                                                                                                                                                                                                       /note= "wild type Gln
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                               "wild type Cys replaced by Ser"
                                                                                                                                                           poly-peptide derivs. - used as C5a receptor treating C5a-mediated diseases and
                                                                                                                                                                                                                                   Van
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               71
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                                                                                                                                                                                                                                Oostrum J;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 114; DB 18;
Pred. No. 1.8e-10;
; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                       replaced by Cys'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           replaced by
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            70;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0;
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RESULT 10
AAW07783
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Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
                                                  WPI; 1997-043125/04.
                                                                           Schmitz A, Van Heeke
                                                                                                                                            05-JUN-1995;
05-JUN-1995;
                                                                                                      (CIBA ) CIBA GEIGY AG.
                                                                                                                                  05-JUN-1995;
                                                                                                                                                                                      04-JUN-1996;
                                                                                                                                                                                                                                                                                Misc-difference
                                                                                                                                                                                                                                          WO9639503-A1
                                                                                                                                                                                                                                                                                                          Misc-difference
                                                                                                                                                                                                                                                                                                                                      Misc-difference
                                                                                                                                                                                                                                                                                                                                                                 Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                       Synthetic.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              adult respiratory distress syndrome; ARDS; pulmonary; injur post myocardial; infarction; inflammatory bowel; endotoxic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Human; complement; C5a; derivative; receptor; antagonist; trauma; treatment; prevention; disease; inflammation; pneumonitis; burn;
                                                                                                                                                                                                                                                                                                                                                                                                                     HOMO sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                      rheumatoid arthritis; psoriasis; sepsis; transplant rejection; immunosuppressive therapy; blood transfusion; dysfunction;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Human complement C5a protein derivative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       suffering from transplant rejection, receiving immunosuppressive therapy or massive blood transfusion, exposed to medical devices or experiencing pulmonary dysfunction following haemodialysis or leukopheresis. It can also be used as a prophylactic, particularly in conditions caused by reperfusion, e.g. reperfusion following ischaemia, and circulatory contact with medical devices, as well as to prevent transplant rejection.
                                                                                                                                                                                                                                                                                                                                                                                                                                          haemodialysis; leukopheresis; prophylaxis; reperfusion
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAW07783 standard; protein; 71
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      the derivative and modify, e.g. neutralise, its activity in vivo. N.B. Sequence not given in specification, but constructed using the wild type sequence given on pages 51-52.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Antibodies against the derivative can be used to detect or quantify
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CCYDGASVNNDETCEQRAAR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CCYDGASVNNDETCEQRAAR 20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               71
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AA;
                                                                                                                                              95US-0463377
95US-0462648
                                                                                                                                 95US-0463224
                                                                                                                                                                                    96WO-EP02422.
                                                                                                                                                                                                                                                                                                          /note= "wild type Cys replaced
67
                                                                                                                                                                                                                                                                                                                                    /note= "wild type Thr replaced by Gly" 27
                                                                                                                                                                                                                                                                 /note= "wild type Gln
                                                                                                                                                                                                                                                                                                                                                                            Location/Qualifiers
                                                                                                                                                                                                                                                                                            note= "wild
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   100.0%;
                                                                           ú
                                                                           Van
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0,
                                                                                                                                                                                                                                                                                          type His replaced by Phe"
                                                                             Oostrum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 114; DB 18; Pred. No. 1.8e-10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                                                 replaced by Cys"
                                                                                                                                                                                                                                                                                                                     bу
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
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New human complement C5a poly-peptide derivs. - used as C5a antagonists, partic. for treating C5a-mediated diseases and inflammatory conditions

receptor

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В
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            bowel disease, rheumatoid arthritis, psoriasis, endotoxic shock, sepsis, severe trauma and burns. It can also be used to treat patients suffering from transplant rejection, receiving immunosuppressive therapy or massive blood transfusion, exposed to medical devices or experiencing pulmonary dysfunction following haemodialysis or leukopheresis. It can also be used as a prophylactic, particularly in conditions caused by reperfusion, e.g. reperfusion following ischaemia, and circulatory contact with medical devices, as well as to prevent transplant rejection. Antibodies against the derivative can be used to detect or quantify the derivative and modify, e.g. neutralise, its activity in vivo. N.B. Sequence not given in specification, but constructed using the wild type sequence given on pages 51-52.
 05-JUN-1995;
05-JUN-1995;
                                                                                                                                                                                                                                                                                                                                                                    Human; complement; C5a; derivative; receptor; antagonist; trauma; treatment; prevention; disease; inflammation; pneumonitis; burn; adult respiratory distress syndrome; ARDS; pulmonary; injury; post myocardial; infarction; inflammatory bowel; endotoxic shock; rheumatoid arthritis; psoriasis; sepsis; transplant rejection; immunosuppressive therapy; blood transfusion; dysfunction;
                                                                                                                                                                               /note=
Misc-difference 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Human complement C5a protein derivative.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          The present sequence, the human complement C5a derivative 1-71, ThriGly, Cys27Ser, His67Phe, GIN77Cys, Is a C5a receptor antagonist which exhibits no agonist activity. It can be used to treat or prevent C5a mediated diseases or inflammation, e.g. pneumonitis,
                                                                                  12-DEC-1996
                                                                                                                                                                                                                                                                                                           Synthetic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAW07804 standard; protein; 71 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             adult respiratory distress syndrome (ARDS), pulmonary inflammation or injury, post myocardial infarction inflammation, inflammatory
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Claim 12; Page -; 93pp; English.
                                                                                                               WO9639503-A1
                                                                                                                                                                                                                             Misc-difference
                                                                                                                                                                                                                                                             Misc-difference
                                                                                                                                                                                                                                                                                                                            Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                        haemodialysis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 CCYDGASVNNDETCEQRAAR 20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CCYDGASVNNDETCEORAAR 40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    71 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (first entry)
                                                                                                                                                                                                                          /note=
27
95US-0463377
95US-0462648
                                                 96WO-EP02422
                                                                                                                                                                                                                                                                                                                                                        leukopheresis;
                                                                                                                                                                                                                                                                         Location/Qualifiers
                                                                                                                                               /note-
                                                                                                                                                                         note- "wild type His replaced by Phe"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           100.08;
                                                                                                                                               "wild
                                                                                                                                                                                                         "wild type Cys
                                                                                                                                                                                                                                       "wild type Thr replaced by Met'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                             type Gln
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 114; DB 18;
Pred. No. 1.8e-10;
); Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                        prophylaxis; reperfusion
                                                                                                                                            replaced by Cys'
                                                                                                                                                                                                          replaced by
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 71;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
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RESULT 12
AAW07791
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
                                                                                                                                                                                                                                                                                                Human; complement; C5a; derivative; receptor; antagonist; trauma; treatment; prevention; disease; inflammation; pneumonitis; burn; adult respiratory distress syndrome; ARDS; pulmonary; injury; post myocardial; infarction; inflammatory bowel; endotoxic shock; rheumatoid arthritis; psoriasis; sepsis; transplant rejection; inmunosuppressive therapy; blood transfusion; dysfunction; haemodialysis; leukopheresis; prophylaxis; reperfusion.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 medical devices or experiencing pulmonary dysfunction following haemodialysis or leukopheresis. It can also be used as a prophylactic, particularly in conditions caused by reperfusion, e.g. reperfusion following ischaemia, and circulatory contact with medical devices, as well as to prevent transplant rejection. Antibodies against the derivative can be used to detect or quantify the derivative and modify, e.g. neutralise, its activity in vivo. N.B. Sequence not given in specification, but constructed using the wild type sequence given on pages 51-52.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 adult respiratory distress syndrome (ARDS), pulmonary inflammatic or injury, post myocardial infarction inflammation, inflammatory bowel disease, rheumatoid arthritis, psoriasis, endotoxic shock, sepsis, severe trauma and burns. It can also be used to treat patients suffering from transplant rejection, receiving immunosuppressive therapy or massive blood transfusion, exposed in
                                                            Misc-difference
                                                                                                                                                                                                                Synthetic.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Human complement C5a protein derivative analogue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             01-SEP-1997 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAW07791 standard; protein; 71
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ThriMet, Cys27Ser, His67Phe, Gln71Cys, is a C5a receptor antag which exhibits no agonist activity. It can be used to treat or prevent C5a mediated diseases or inflammation, e.g. pneumoniti
                                                                                                                   Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Schmitz A,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Example 3; Page -; 93pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           antagonists, partic.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (CIBA ) CIBA GEIGY AG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     05-JUN-1995;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           inflammatory conditions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     New human complement C5a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 CCYDGASVNNDETCEQRAAR 20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1997-043125/04.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Cys27Ser, His67Phe,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 71
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Van Heeke
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     95US-0463224.
                                                         /note= "wild type Thr replaced by Met" 27
/note= "wild type Cys replaced by Ser"
71
                                                                                                                                                   Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           C5a poly-peptide derivs. - used as for treating C5a-mediated diseases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ó
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    human complement C5a derivative 1-71,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Van Oostrum J;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 114;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1.8e-10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    C5a receptor antagonist
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        e.g. pneumonitis,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              inflammation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
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0

Misc-difference

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RESULT 13
AAW07792
ID AAW077
XX
AC AAW077
XC AAW077
XX
BC Human
XX
Human
XW Human
XW Human
XW Human
XW Treat
KW Jimmun
KW Immun
KW Immun
KW Hammun
KW Hammun
KW Hammun
KW Hammun
KW Hammun
KW Hammun
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Дb
                                                                                                                                                                                                                                                                                                                                                                                           δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
                Human; complement; C5a; derivative; receptor; antagonist; trauma; treatment; prevention; disease; inflammation; pneumonitis; burn; adult respiratory distress syndrome; ARDS; pulmonary; injury; post myocardial; infarction; inflammatory bowel; endotoxic shock; rheumatoid arthritis; psoriasis; sepsis; transplant rejection; immunosuppressive therapy; blood transfusion; dysfunction;
                                                                                                                                                  Human complement C5a protein derivative analogue 9.
                                                                                                                                                                                                                                                             AAW07792 standard; protein; 72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        suffering from transplant rejection, receiving immunosuppressive therapy or massive blood transfusion, exposed to medical devices or experiencing pulmonary dysfunction following haemodialysis or leukopheresis. It can also be used as a prophylactic, particularly in conditions caused by reperfusion, e.g. reperfusion following ischaemia, and circulatory contact with medical devices, as well as to prevent transplant rejection.

Antibodies against the derivative can be used to detect or quantify the derivative and modify, e.g. neutralise, its activity in vivo.

N.B. Sequence not given in specification, but constructed using the
                                                                                                                                                                                              01-SEP-1997
                                                                                                                                                                                                                                   AAW07792;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     The present sequence, the human complement C5a derivative 1-71, Thr1Met, Cys27Ser, G1n71Cys, is a C5a receptor antagonist which exhibits no agonist activity. It can be used to treat or prevent C5a mediated diseases or inflammation, e.g. pneumonitis, adult respiratory distress syndrome (ARDS), pulmonary inflammation or injury, post myocardial infarction inflammation, inflammatory bowel disease, rheumatoid arthritis, psoriasis, endotoxic shock, sepsis, severe trauma and burns. It can also be used to treat patients enforcements.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           05-JUN-1995;
05-JUN-1995;
05-JUN-1995;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            New human complement C5a antagonists, partic for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Example 3; Page -; 93pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WPI; 1997-043125/04.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               inflammatory conditions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Schmitz A,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (CIBA ) CIBA GEIGY AG.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   04-JUN-1996;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        W09639503-A1
                                                                                                                                                                                                                                                                                                                                                      Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                      1 CCYDGASVNNDETCEQRAAR 20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 sequence given on pages 51-52.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   71 AA;
                                                                                                                                                                                           (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Van Heeke G,
     leukopheresis; prophylaxis; reperfusion
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         95US-0463377.
95US-0462648.
95US-0463224.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              96WO-EP02422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /note= "wild type Gln replaced by Cys"
                                                                                                                                                                                                                                                                                                                                                                                                                         100.0%; S
100.0%; P
ative 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      poly-peptide derivs. - used as C5a receptor treating C5a-mediated diseases and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Van Oostrum J;
                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 114; DB 18;
Pred. No. 1.8e-10;
                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 71;
                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                       0,
                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                     0;
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DE XX DT XX

Human C5a 16-MAY-2001 AAB74053;

(first entry)

AAB74053 RESULT 14

AAB74053 standard;

protein; 74 AA

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The present sequence, the human complement C5a derivative 1-72, Thilmet, Cys27Ser, Leu72Cys, is a C5a receptor antagonist which can be used to treat or prevent C5a mediated diseases or inflammation, e.g. pneumonitis, adult C5a mediated diseases or inflammation, e.g. pneumonitis, adult C5a mediated diseases or inflammation, inflammation or C injury, post myocardial infarction inflammation, inflammatory bowel C6 disease, rheunatoid arthritis, psoriasis, endotoxic shock, sepsis, C7 consists, and carchitis, province to treat patients C8 severe trauma and burns. It can also be used to treat patients C9 confering from transplant rejection, receiving immunosuppressive C9 conserved to medical devices C9 consistions caused by suffering following haemodialysis or C9 conditions caused by reperfusion, e.g. reperfusion following C9 ischaemia, and circulatory contact with medical devices, as well as C9 conditions caused by reperfusion, e.g. reperfusion following C9 ischaemia, and circulatory contact with medical devices, as well as C9 conditions against the derivative can be used to detect or quantify the derivative and modify. e.g. neutralise. its activity in vivo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      XX OS OS OS OS OS
                                                                  Matches
                                                                                   Query Match
Best Local :
                                                                                                                                                   the derivative and modify, e.g. neutralise, its activity in vivon. N.B. Sequence not given in specification, but constructed using wild type sequence given on pages 51-52.
                                                                                                                             Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      05-JUN-1995;
05-JUN-1995;
05-JUN-1995;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Example 3; Page -; 93pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        New human complement C5a antagonists, partic. for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Schmitz A,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        inflammatory conditions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WPI; 1997-043125/04.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (CIBA ) CIBA GEIGY AG.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      12-DEC-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WO9639503-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Synthetic.
   21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Homo sapiens.
                                                                               Local
                            1 CCYDGASVNNDETCEQRAAR 20
CCYDGASVNNDETCEORAAR
                                                                               Similarity
                                                                                                                             72 AA;
                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Van Heeke
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   95US-0463377
95US-0462648
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  95US-0463224
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     96WO-EP02422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /note= "wild type Thr replaced
27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /note= "wild type Leu replaced by Cys"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note= "wild type Cys replaced
                                                                             100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ú
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  poly-peptide derivs. - used as C5a receptor treating C5a-mediated diseases and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Van Oostrum J;
                                                            0;
                                                                               Pred. No.
                                                                                             Score 114;
                                                              Mismatches
                                                                            1; DB 18;
. 1.8e-10;
                                                                                                                                                                                        its activity in vivo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                bу
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             by Met"
                                                                                         Length
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                                                         Gaps
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                                                                                                                                                                                                                                                                                                                                                                                                                       Matches
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         (UNMI ) UNIV MICHIGAN
                                   31-AUG-1999;
                                                           31-AUG-2000; 2000WO-US24219.
                                                                                      08-MAR-2001
                                                                                                               WO200115731-A1.
                                                                                                                                          Unidentified.
                                                                                                                                                                wound; anaphylatoxin; sepsis.
                                                                                                                                                                       C5a; complement; antibody; bacterial infection; sinusitis; meningitis; respiratory; gastrointestinal; urinary tract infection;
                                                                                                                                                                                                                C-terminal truncated C5a peptide #49.
                                                                                                                                                                                                                                            16-MAY-2001 (first entry)
                                                                                                                                                                                                                                                                         AAB74111;
                                                                                                                                                                                                                                                                                             AAB74111 standard; Peptide; 20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     The present sequence is human complement component CSa. The present invention relates to an antibody specific for the present sequence. The CSa-antibody can be used in a therapeutic composition, which is useful for treating a subject suffering from bacterial infection, e.g. sinusitis, meningitis, respiratory, gastrointestinal or urinary tract infections or infections in wounds. In addition, the CSa antibody can be used for treating sepsis. CSa is also known as anaphylatoxin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Compositions for treating blood-borne and toxin mediated diseases and treatment of sepsis in humans and other animals comprises anti-C5a antibodies generated against C-terminal truncated C5a peptides
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Example 7; Page 26; 84pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 N-PSDB; AAF75791.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WPI; 2001-226665/23.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ward PA, Huber-Lang M,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          31-AUG-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Human; C5a; complement; antibody; bacterial infection; sinusitis; meningitis; respiratory; gastrointestinal; urinary tract infection; wound; anaphylatoxin; sepsis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  31-AUG-2000; 2000WO-US24219.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             08-MAR-2001.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (UNMI ) UNIV MICHIGAN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WO200115731-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                              21 CCYDGASVNNDETCEQRAAR 40
                                                                                                                                                                                                                                                                                                                                                                            1 CCYDGASVNNDETCEQRAAR 20
                                                                                                                                                                                                                                                                                                                                                                                                                                  Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                     20;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       74 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                   9908-0387671.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         99US-0387671.
                                                                                                                                                                                                                                                                                                                                                                                                                100.0%; S
100.0%; P
ative 0;
                                                                                                                                                                                                                                                                                                                                                                                                                Score 114; DB 22; Pred. No. 1.9e-10; ); Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 74;
                                                                                                                                                                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
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                                                                                                                                     Matches
                                                                                                     Query Match
                                                                                   Best Local Similarity
                                                                                                                                                                         The present sequence is a C-terminal truncated C5a peptide fragment. The present invention relates to an antibody specific for the present sequence. The C5a-antibody can be used in a therapeutic composition, which is useful for treating a subject suffering from bacterial infection, e.g. sinusitis, meningitis, respiratory, gastrointestinal or urinary tract infections or infections in wounds. In addition, the C5a antibody can be used for treating sepsis. C5a is also known as
                                                                                                                                                                                                                                                                                                                                        Compositions for treating blood-borne and toxin mediated diseases and treatment of sepsis in humans and other animals comprises anti-C5a antibodies generated against C-terminal truncated C5a peptides
                                                                                                                                     Sequence
                                                                                                                                                                    anaphylatoxin.
                                                                                                                                                                                                                                                                                                               Disclosure; Page 30; 84pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                  WPI; 2001-226665/23.
Huber-Lang M,
                                                                                                                                     20 AA;
                                                                    Conservative
                                                                                  95.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                               Sarma V;
                                                                  ۲.
                                                                              Score 111; DB 22;
Pred. No. 1.3e-10;
                                                                  Mismatches
                                                                                              Length 20;
                                                               Indels
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Search completed: May 1, 2003, 22:17:25
Job time: 36 secs

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Database
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Maximum DB seq length: 2000000000
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Title:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                     ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                  Score
                                                                                                                                                                                                                                                                                                                                                                                                                                              is derived by analysis of the total score distribution
                                              Match Length
                                                                                                                                                                                                                                                                                                                                                                                  Query
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BLOSUM62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     328255 seqs, 86286685 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 CCYDGASVNNDETCEQRAAR 20
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114
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GenCore version 5.1.4_p5_4578 Copyright (c) 1993 - 2003 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /cgn2_6/ptodata/2/pubpaa/US08_PUBCOMB.pep:*
/cgn2_6/ptodata/2/pubpaa/US09_NEW_PUB.pep:*
/cgn2_6/ptodata/2/pubpaa/US09_NEW_PUB.pep:*
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/cgn2_6/ptodata/2/pubpaa/US10_PUBCOMB.pep:*
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/cgn2_6/ptodata/2/pubpaa/PCT_NEW_PUB.pep:*
/cgn2_6/ptodata/2/pubpaa/US06_NEW_PUB.pep:*
/cgn2_6/ptodata/2/pubpaa/US06_NEW_PUB.pep:*
/cgn2_6/ptodata/2/pubpaa/US07_NEW_PUB.pep:*
/cgn2_6/ptodata/2/pubpaa/US07_PUBCOMB.pep:*
/cgn2_6/ptodata/2/pubpaa/US07_PUBCOMB.pep:*
/cgn2_6/ptodata/2/pubpaa/PCTUS_PUBCOMB.pep:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /cgn2_6/ptodata/2/pubpaa/US60_PUBCOMB.pep:*
         US-09-878-603-5
US-09-878-603-67
US-09-878-603-67
US-09-878-603-67
US-09-878-603-71
US-09-878-603-73
US-09-878-603-73
US-09-878-603-73
US-09-987-655-3
US-09-987-655-3
US-09-987-655-3
US-09-9878-603-64
US-09-878-603-65
US-09-878-603-65
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US-09-878-603-65
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107.858 Million cell updates/sec
Sequence 3, Appli
Sequence 5, Appli
Sequence 59, Appl
Sequence 64, Appl
Sequence 65, Appl
Sequence 65, Appl
Sequence 72, Appl
Sequence 59, Appl
Sequence 59, Appl
Sequence 59, Appl
                                                                                                                                                                                              Sequence 67, Appl
Sequence 69, Appl
Sequence 70, Appl
Sequence 71, Appl
Sequence 73, Appl
                                                                                                                                                            Sequence 73,
Sequence 54,
Sequence 3, A
                                                                                                                                                                                                                                                                                                                                                            Description
                                                                                                                                                                                                                                                                                   Sequence 3, A
                                                                                                                                                                                                                                                                                                                         Sequence
                                                                                                                                                                               Appl
                                                                                                                                                              RESULT 2
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                                                                                                                                                                                                                                                                                                                                                                                                       SOFTWARE: PatentIn Ver. 2.0
SEQ ID NO 5
LENGTH: 20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 5, Application US/09878603 Patent No. US20020165138A1
                                                                                                                                                                                                                                                                                                    Best
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CURRENT APPLICATION NUMBER: US/09/878,603
CURRENT FILING DATE: 2001-06-11
PRIOR APPLICATION NUMBER: 09/387,671
PRIOR FILING DATE: 1999-08-31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT: Ward, Peter A.
APPLICANT: Huber-Lang, Markus
APPLICANT: Sarma, Vidya
APPLICANT: Czermak, Boris
TITLE OF INVENTION: Compositions and Methods for the Treatment of Sepsis
FILE REFERENCE: UM-03783
                                                                                                                                                                                                                                                                                                                                                                                                                                                             NUMBER OF SEQ ID NOS: 74
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42	42	42	42	42	42	42	42	42	42	42	42	42	51	77	83	84	85	89	91	93	94	96	96	98	101
	36.8	•	•		•																				88.6
263	241	241	241	241	241	241	241	241	241	241	233	233	20	15	16	77	354	17	15	74	74	18	16	20	17
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-392-2	-09-115-453-	-09-822	-09-030-606-	-669	9-143-	-193-	-09-895-814-11	-09-895-793-	-10-012-896-	-232-880-1	-545 - 1	-876-	-603-	US-09-878-603-63	-603-	- 1	39-050-	78-603-6	-878-	-09-878-603-	-878-603-			US-09-878-603-74	US-09-878-603-56
2, App		114.	114	114	e 114	44	=	e 114.	114	114	e 137.	137	0 2 2	e 63	e 62,	<u> </u>	e 2, A	61	e 58	8	7	e 60,	e 57	e 74	Sequence 56, Appl

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US-09-878-603-3; Sequence 3, Application US/09878603; Patent No. US20020165138A1
                                                         ; GENERAL INFORMATION: APPLICANT: Ward, Peter A.
                                                                                                                                                                                                                                                                                     US-09-878-603-5
                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                        Query Match
TITLE OF INVENTION: Compositions and Methods for the Treatment of Sepsis
                    APPLICANT:
                                              APPLICANT:
                                                                                                                                                                                                                                                                                              TYPE: PRT ORGANISM: Homo sapiens
                                                                                                                                                                                                                                          Local Similarity
                                                                                                                                                                                    1 CCYDGASVNNDETCEQRAAR 20
                                                                                                                                                                    CCYDGASVNNDETCEQRAAR 20
                                                                                                                                                                                                                             20;
                                Huber-Lang, Markus
Sarma, Vidya
                 Czermak,
                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                         100.0%;
                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                       Score 114; DB 9;
Pred. No. 2.4e-10;
Pred. No. 2.4e-10;
Mismatches 0;
                                                                                                                                                                                                                                                   Length 20;
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US-09-878-603-67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     OTHER INFORMATION: Description of Artificial Sequence: Synthetic US-09-878-603-68
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-09-878-603-68
Sequence 68, Application US/09878603; Patent No. US20020165138A1; GENERAL INFORMATION:
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                                                                                                                                                                                                                                                         Sequence 67, Application US/09878603 Patent No. US20020165138A1
                                                                                                                                                                                                                                         GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
                      APPLICANT: Czermak, Boris
TITLE OF INVENTION: Compositions and Methods for the Treatment of Sepsis
FILE REFERENCE: UM-03783
CURRENT APPLICATION NUMBER: US/09/878,603
CURRENT FILING DATE: 2001-06-11
PRIOR APPLICATION NUMBER: 09/387,671
PRIOR PILING DATE: 1999-08-31
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SOFTWARE: PatentIn Ver. 2.0
                                                                                                                                                                                               APPLICANT: Ward, Peter A. APPLICANT: Huber-Lang, M
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CURRENT APPLICATION NUMBER: US/09/878,603
CURRENT FILING DATE: 2001-06-11
PRIOR APPLICATION NUMBER: 09/387,671
PRIOR FILING DATE: 1999-08-31
NUMBER OF SEQ ID NOS: 74
                                                                                                                                                                               APPLICANT:
                  NUMBER OF SEQ ID NOS: 74
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TITLE OF INVENTION: Compositions and Methods for the Treatment of Sepsis
FILE REFERENCE: UM-03783
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CURRENT FILING DATE: 2001-06-11
PRIOR APPLICATION NUMBER: 09/387,671
PRIOR ETLING DATE: 1999-08-31
NUMBER OF SEO ID NOS: 74
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TYPE: PRT
ORGANISM: Artificial Sequence
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LENGTH: 74
TYPE: PRT
ORGANISM: Homo sapiens
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                                                                                                                                                                               Sarma, Vidya
                                                                                                                                                                                             Huber-Lang, Markus
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Sarma, Vidya
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95.08;
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Pred. No. 6.4e-10;
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US-09-878-603-70
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; Patent No. US20020165138A1
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; Sequence 69, Application US/09878603

; Patent No. US20020165138A1
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PRIOR APPLICATION NUMBER: 09/387,671
PRIOR FILING DATE: 1999-08-31
NUMBER OF SEQ ID NOS: 74
SOFTWARE: Patentin Ver. 2.0
SEQ ID NO 69
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LENGTH: 20
TYPE: PRT
                                                                           SEQ ID NO 70
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Best Local Similarity
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                                                                                                             PRIOR APPLICATION NUMBER: 09/387,671 PRIOR FILING DATE: 1999-08-31 NUMBER OF SEQ ID NOS: 74
                                                                                                                                                                                                                                                              APPLICANT: Ward, Peter A.
APPLICANT: Huber-Lang, M
APPLICANT: Sarma, Vidya
                                                                                                                                                                     CURRENT APPLICATION NUMBER: US/09/878,603
CURRENT FILING DATE: 2001-06-11
                                                                                                                                                                                                           APPLICANT: Czermak, Boris TITLE OF INVENTION: Compositions and Methods for the Treatment of Sepsis FILE REFERENCE: UM-03783
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                                                                                           SOFTWARE: Patentin Ver.
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TITLE OF INVENTION: Compositions and Methods for the Treatment of Sepsis
FILE REFERENCE: UM-03783
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APPLICANT: Huber-Lang, N
APPLICANT: Sarma, Vidya
           LENGTH: 20
TYPE: PRT
ORGANISM: Artificial Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CURRENT APPLICATION NUMBER: US/09/878,603
FEATURE:
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ORGANISM: Artificial Sequence
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nes 19; Conserv
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Sarma, Vidya
                                                                                                                                                                                                                                                                                                                                                              Application US/09878603
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Sarma, Vidya
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95.0%;
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Pred. No. 9e-10;
0; Mismatches
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Pred. No. 9e-10;
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CURRENT APPLICATION NUMBER: US/09/878,603
: CURRENT FILING DATE: 2001-06-11
: PRIOR APPLICATION NUMBER: 09/387,671
: PRIOR FILING DATE: 1999-08-31
: PRIOR FILING DATE: 1999-08-31
: NUMBER OF SEQ ID NOS: 74
: SOFTWARE: Patentin Ver. 2.0
: SEQ ID NO 71
: LENGTH: 20
: TYPE: PRT
                                                             ; OTHER INFORMATION: Description of Artificial Sequence: US-09-878-603-73
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; Sequence 73, Application US/09878603

; Patent No. US20020165138A1
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                                                                                                                                                                             CURRENT APPLICATION NUMBER: US/09/878,603
CURRENT FILING DATE: 2001-06-11
PRIOR APPLICATION NUMBER: 09/387,671
PRIOR FILING DATE: 1999-08-31
NUMBER OF SEQ ID NOS: 74
SOFTWARE: PATENTIN VET. 2.0
SEQ ID NO 73
  Ouery Match
Best Local Similarity
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Best Local Similarity
Matches 19; Conserv
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Best Local
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                                                                                                                                                                                                                                                                                                           APPLICANT: Sarma, Vidya
APPLICANT: Czermak, Boris
TITLE OF INVENTION: Compositions and Methods for the Treatment of Sepsis
FILE REFERENCE: UM-03783
                                                                                                                                                                                                                                                                                                                                                                        APPLICANT: Ward, Peter A. APPLICANT: Huber-Lang, Markus APPLICANT: Sarma, Vidya
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APPLICANT: Huber-Lang, Markus
APPLICANT: Sarma, Vidya
APPLICANT: Czermak, Boris
TITLE OF INVENTION: Compositions and Methods for the Treatment of Sepsis
FILE REFERENCE: UM-03783
                                                                                                                LENGTH: 20
TYPE: PRT
ORGANISM: Artificial Sequence
                                                                                                     FEATURE:
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    95.0%;
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Score 110; DB 9
Pred. No. 9e-10;
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Pred. No. 9e-10;
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                    DB 9;
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                  Length 20
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                                                                             Synthetic
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                                                        Matches
                                                                                        Query Match
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Best Local Similarity 100.
Matches 19; Conservative
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SOFTWARE: PatentIn Ver. 2.0
SEQ ID NO 54
                                                                       Best Local Similarity
                                                                                                                                                                                                      APPLICANT: Canne, Lynne
APPLICANT: Kent, Stephen B.H.
APPLICANT: Simon, Reyna
TITLE OF INVENTION: Solid Phase Native Chemical Ligation of Unprotected or
TITLE OF INVENTION: N-Terminal Cysteine Protected Peptides in Aqueous
TITLE OF INVENTION: Solution
FILE REFERENCE: GREN-023/01US
FILE REFERENCE: GREN-023/01US
CURRENT APPLICATION NUMBER: US/09/987,675
CURRENT APPLICATION NUMBER: 09/097,094
PRIOR APPLICATION NUMBER: 09/097,094
PRIOR FILING DATE: 1998-06-12
NUMBER OF SEQ ID NOS: 6
SOFTWARE: Patentin Ver. 2.0
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Patent No. US20020165138A1
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CURRENT FILING DATE: 2001-06-11
PRIOR APPLICATION NUMBER: 09/387,671
PRIOR FILING DATE: 1999-08-31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT: Ward, Peter A. APPLICANT: Huber-Lang, M
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT: Sarma, Vidya
APPLICANT: Czermak, Boris
TITLE OF INVENTION: Compositions and Methods for the Treatment of Sepsis
FILE REFERENCE: UM-03783
                                                                                                                                                               LENGTH: 73
TYPE: PRT
                                                                                                                                       ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TYPE: PRT ORGANISM: Artificial Sequence FEATURE:
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1 CCYDGASVNNDETCEQRAAR 20
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Sarma, Vidya
                                                      Conservative
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                                                                 Score 109; DB 9;
Pred. No. 4.7e-09;
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                                                      Mismatches
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                                                                                    Length 73;
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В

20 CCYDGACVNNDETCEQRAAR 39

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RESULT 13
US-09-778-927A-59
; Sequence 59, App
                                                                                                                                                                                                                                                             ; NAME/KEY: misc_feature
; LOCATION: (1)..(1251)
; OTHER INFORMATION: Xaa = any amino acid, unknown, or other
US-09-778-927A-58
                                                                                                          В
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US-09-778-927A-58
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; ORGANISM: Homo sapiens
US-09-987-655-3
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US-09-987-655-3
                                                                                                                                                                                                                                                                                                                                                                                                              SOFTWARE: PatentIn Ver. 2.1
SEQ ID NO 58
LENGTH: 1251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GENERAL INFORMATION: APPLICANT: KHOSRAVI, Rami et al.
APPLICANT: KHOSRAVI, Rami et al.
TITLE OF INVENTION: NOVEL NUCLEIC ACID AND AMINO ACID SEQUENCES AND NOVEL
TITLE OF INVENTION: VARIANTS OF ALTERNATIVE SPLICING
FILE REFERENCE: 2786-0160P
                                                                                                                                                                                            Matches
                                                                                                                                                                                                           Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 58, Application US/09778927A Patent No. US20020068342A1
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GENERAL INFORMATION:
APPLICANT: Kent, Stephen B.H.
APPLICANT: Simon, Reyna
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CURRENT APPLICATION NUMBER: US/09/778,927A
CURRENT FILING DATE: 2001-02-08
PRIOR APPLICATION NUMBER: IL 134453
PRIOR FILING DATE: 2000-02-09
PRIOR APPLICATION NUMBER: IL135341
PRIOR FILING DATE: 2000-03-29
RIOR FILING DATE: 2000-03-29
UNMBER OF SEQ ID NOS: 81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT: Simon, Reyna
TITLE OF INVENTION: Solid Phase Native Chemical Ligation of Unprotected or
TITLE OF INVENTION: Noterinal Cysteine Protected Peptides in Aqueous
TITLE OF INVENTION: Solution
TITLE OF INVENTION: Solution
TITLE OF INVENTION: Solution
TITLE OF PRIORITION NUMBER: US/09/987,655
CURRENT APPLICATION NUMBER: US/09/987,655
CURRENT FILING DATE: 2001-11-15
PRIOR APPLICATION NUMBER: 09/097,094
PRIOR FILING DATE: 1998-06-12
NUMBER OF SEQ ID NOS: 6
SOFTWARE: Patentin Ver. 2.0
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Patent No. US20020132975A1
                                                                                                                                                                                                                                                                                                                                                                           ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                 TYPE: PRT
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es 19; Conserv
59, Application US/09778927A
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Pred. No. 8.6e-08;
0; Mismatches 1;
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Pred. No. 4.7e-09;
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US-09-878-603-65 RESULT 15

: Sequence 65, Application US/09878603 : Patent No. US20020165138A1 : GENERAL INFORMATION:

APPLICANT: Ward, Peter A.

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US-09-878-603-64
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; LOCATION: (1)..(1602)
; OTHER INFORMATION: Xaa = any amino acid, unknown, or other
US-09-778-927A-59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-09-878-603-64
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Best Local Similarity 95.0
                                                                                      Matches
                                                                                                   Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                            SEQ ID NO 64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GENERAL INFORMATION
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Patent No. US20020165138A1
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LENGTH: 1602
                                                                                                                                                                                                                                                                                                                                                CURRENT APPLICATION NUMBER: US/09/878,603
CURRENT FILING DATE: 2001-06-11
PRIOR APPLICATION NUMBER: 09/387,671
PRIOR FILING DATE: 1999-08-31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GENERAL INFORMATION:
APPLICANT: KHOSRAVI, Rami et al.
APPLICANT: KHOSRAVI, Rami et al.
TITLE OF INVENTION: NOVEL NUCLEIC ACID AND AMINO ACID SEQUENCES AND NOVEL
TITLE OF INVENTION: VARIANTS OF ALTERNATIVE SPLICING
FILE REFERENCE: 2786-0160P
                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT: Ward, Peter A.
APPLICANT: Huber-Lang, Markus
APPLICANT: Sarma, Vidya
APPLICANT: Czermak, Boris
TITLE OF INVENTION: Compositions and Methods for the Treatment of Sepsis
FILE REFERENCE: UM-03783
                                                                                                                                                                                                                                                                                                             NUMBER OF SEQ ID NOS: 74
SOFTWARE: PatentIn Ver. 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Patent No. US20020068342A1
                                                                                                                                                                                                                                                   LENGTH: 20
TYPE: PRT
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PRIOR APPLICATION NUMBER: IL135341
PRIOR FILING DATE: 2000-03-29
NUMBER OF SEQ ID NOS: 81
SOFTWARE: Patentin Ver. 2.1
                                                                                                                                                          FEATURE: OTHER INFORMATION: Description of Artificial Sequence: Synthetic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CURRENT APPLICATION NUMBER: US/09/778,927A CURRENT FILING DATE: 2001-02-08
                                                                                                                                                                                                                             ORGANISM: Artificial Sequence
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1 CCYQGASVNNDETCEQRAAR 20
                       1 CCYDGASVNNDETCEQRAAR 20
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                                                                                    19;
                                                                                  Conservative
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95.0%;
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Pred. No. 1.8e-09;
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APPLICANT: Huber-Lang, Markus
APPLICANT: Sarma, Vidya
APPLICANT: Czermak, Boris
TITLE OF INVENTION: Compositions and Methods for the Treatment of Sepsis
FILE REFERENCE: UM-03783
CURRENT APPLICATION NUMBER: US/09/878,603
CURRENT FILING DATE: 2001-06-11
PRIOR APPLICATION NUMBER: 09/387,671
PRIOR APPLICATION NUMBER: 09/387,671
PRIOR FILING DATE: 1999-08-31
NUMBER OF SEQ ID NOS: 74
SOFTWARE: Patentin Ver. 2.0
SEQ ID NO 65
LENGTH: 20
TYPE: PRT
ORGANISM: Artificial Sequence
FEATURE:
OTHER INFORMATION: Description of Artificial Sequence: Synthetic
US-09-878-603-65

Query Match
Best Local Similarity 95.0%; Pred. No. 1.8e-09;
Matches 19; Conservative 0; Mismatches 1; Indels 0; Gaps
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1: /cgn2_6/ptodata/1

2: /cgn2_6/ptodata/1

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5: /cgn2_6/ptodata/1

6: /cgn2_6/ptodata/1
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114
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Listing first 45 summaries
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/cgn2_6/ptodata/1/iaa/5B_COMB.pep:*
/cgn2_6/ptodata/1/iaa/6A_COMB.pep:*
/cgn2_6/ptodata/1/iaa/6B_COMB.pep:*
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US-09-246-500B-13
US-09-246-500B-13
US-09-246-500B-13
US-09-246-500B-6
US-09-246-500B-6
US-09-246-500B-7
US-09-246-500B-9
US-09-246-500B-9
US-09-246-500B-9
US-09-246-500B-9
US-09-246-500B-9
US-09-246-500B-13
US-09-246-500B-13
US-09-246-500B-13
US-09-246-500B-13
US-09-246-500B-13
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US-09-257-20B-114
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US-09-352-616A-114
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LENGTH: 73
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Best Local
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APPLICANT:
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APPLICANT:
                     ADDRESSEE:
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US-08-652-877-86	0	*		-160	US-07-697-275-2	US-07-710-361-12	US-08-867-087B-64	US-U9-323-932A-5/	10-00-001 000 01	US-08-469-658-52	US-08-469-486-52	US-09-077-955-34	US-08-644-2/1-30		900-623-00-	US-09-632-098-2	US-08-836-443-3		-08-483-101	US-09-017-947-34	US-08-662-227-34
Sequence 86, Appl	Sequence 84, Appl	Sequence 84, Appl	riddy 'o actuance	ָי ת			•	Sequence 57, Appl	•	3 6	5	Sequence 34, Appl	Sequence 30, Appl	riddy ' Panence			Sequence 3, Appli	rddw ra' aphae	,	ب د د	Sequence 34. Annl

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Sequence 3, Application US/09097094
Patent No. 6326468
Patent No. 6326468
GENERAL INFORMATION:
APPLICANT: Canne, Lynne
APPLICANT: Simon, Reyna
PATELICANT: Simon, Reyna
APPLICANT: Simon, Reyna
TITLE OF INVENTION: Solid Phase Native Chenical Ligation of Unprotected or TITLE OF INVENTION: Solution
TITLE OF INVENTION: Solution
FILE REFERENCE: GRFW-023/01US
CURRENT FILING DATE: 1998-06-12
EARLIER APPLICATION NUMBER: US/09/097,094
CURRENT FILING DATE: 1998-06-13
EARLIER FILING DATE: 1997-06-13
NUMBER OF SEQ ID NOS: 6
SOPTWARE: Datentin Var 2) 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ; TYPE: PRT
; ORGANISM: Homo sapiens
US-09-097-094-3
                                                                                                                                                                                                                                                      Sequence 3, Application US/08463224 Patent No. 5807824 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SOFTWARE: PatentIn Ver. 2.0
                                                                                  APPLICANT: van Heeke, Gino
TITLE OF INVENTION: C5a Receptor Antagonists Having
TITLE OF INVENTION: Substantially No. 5807824Agonist Activity
NUMBER OF SEQUENCES: 67
                                                             CORRESPONDENCE ADDRESS:
STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                  1 CCYDGASVNNDETCEQRAAR 20
                                                                                                                                                                                                                                                                                                                                                                                                             CCYDGACVNNDETCEQRAAR 39
Westfield
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                  E: Lerner, David, Littenberg, Krumholz & Mentlik 600 South Avenue West
                                                                                                                                                                  Boyar, William C.
Galakatos, Nicholas G.
Schmitz, Albert
                                                                                                                                                                                                                                    van Oostrum, Jan
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Pred. No. 6.2e-10;
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US-08-463-377-3
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              TELEFAX: 908-654-7866
TELEX: 139-125
INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS:
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INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                   ATTORNEY/AGENT INFORMATION:
NAME: FOLEY, Shawn P.
TELECOMMUNICATION INFORMATION:
TELEPHONE: 908-654-5000
                                                                                                                                                                                           CURRENT APPLICATION DATA:
APPLICATION NUMBER: US,
                                                                                                                                                                                                                                                                                                   COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT: van Heeke, Gino
TITLE OF INVENTION: C5a Receptor Antagonists Having
TITLE OF INVENTION: Substantially No. 5837499Agonist Activity
NUMBER OF SEQUENCES: 67
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CORRESPONDENCE ADDRESS:
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NAME: FOLEY, Shawn P.
TELECOMMUNICATION INFORMATION:
TELEPHONE: 908-654-5000
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OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/463,224
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APPLICANT:
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MEDIUM TYPE: Floppy
                                                                                                                                                                                                                         COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS SOFTWARE: PatentIn Release #1.0, Version #1.25
                                                                                                                                                                                                                                                                                                                                                      STREET: 600 South Avenue West
CITY: Westfield
STATE: NJ
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                                                    TELEPHONE: 900 CTELEPHONE: 908-654-7866
                                                                                                                                                                              FILING DATE:
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   LENGTH:
                                                                                                                                                          CLASSIFICATION: 435
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TOPOLOGY: linear
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Galakatos, Nicholas G.
Schmitz, Albert
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                                                                                                                                                                                                                                                                                 Floppy disk
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95.0%;
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; Patent No. 6235494
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ; MOLECULE TYPE: protein US-08-463-377-3
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CURRENT FILING DATE: 1999-02-08
NUMBER OF SEQ ID NOS: 19
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GENERAL INFORMATION:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: Hugli, Tony E.
TITLE OF INVENTION: Substrates for Assessing Mannan-Binding
TITLE OF INVENTION: Protein-Associated Serine Protease Activity and Methods
TITLE OF INVENTION: Using the Substrates
FILE REFERENCE: 24730-2204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FEATURE:
NAME/KEY: CARBOHYD
LOCATION: (64)...(66)
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TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORGANISM: Human C5a Anaphylatoxin
COMPUTER READABLE FORM: MEDIUM TYPE: 3.5 inch, 1.4Mb storage
                                                                                                                                                         APPLICANT: Squinto, Stephen P.
APPLICANT: Thomas, Thomas C.
APPLICANT: Wilkins, James A.
TITLE OF INVENTION: METHODS AND COMPOSITIONS FOR THE TREATMENT
TITLE OF INVENTION: OF INFLAMMATORY DISEASES
NUMBER OF SEQUENCES: 26
                                                                                                                                            CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                         APPLICANT:
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                                                      STATE: C
                                                                                           CITY: New Haven
                                                                                                          STREET:
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                                                                                                                             ADDRESSEE:
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les 19; Conserv
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                                       06511
                                                                      Connecticut
                                                                                                      E: Seth A. Fidel
25 Science Park (Alexion)
                                                        USA
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95.0%; Pred. No. 6.3e-10;
7ative 0; Mismatches 1
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95.0%;
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Pred. No. 6.3e-10;
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COMPUTER:

Macintosh Cetris 610

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US-09-246-500B-12

; Sequence 12, Application US/09246500B

; Patent No. 6235494
US-09-246-500B-12
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                                               GENERAL INFORMATION:
APPLICANT: Hugl1, TONY E.
APPLICANT: Hugl1, TONY E.
TITLE OF INVENTION: Substrates for Assessing Mannan-Binding
TITLE OF INVENTION: Protein-Associated Serine Protease Activity and Methods
TITLE OF INVENTION: Using the Substrates
FILE REFERENCE: 24730-2204
CURRENT APPLICATION NUMBER: US/09/246,500B
CURRENT FILING DATE: 1999-02-08
NUMBER OF SEQ ID NOS: 19
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 12
LENGTH: 74
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITLE: Compl. Patent No. 6355245
TITLE: Compl.
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INFORMATION FOR SEQ ID NO: 2:
           TYPE: PRT ORGANISM: Cow C5a Anaphylatoxin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SOFTWARE: WordPerfect 3.0
CURRENT APPLICATION DATA:
APPLICATION UMBER: US/08,
FILING DATE: June 7, 1995
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE/DOCKET NUMBER: ALTELECOMMUNICATION INFORMATION: TELEPHONE: (203)776-1790
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   HYPOTHETICAL: NO ANTI-SENSE: NO ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FILING DATE: 02-MAY-1994
ATTORNEY/AGENT INFORMATION:
NAME: Seth A. Fidel.
REGISTRATION NUMBER: 38,449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ORGANISM: Homo sapiens PUBLICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MOLECULE TYPE:
DESCRIPTION:
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LENGTH: 1676 Amino Acids
                                                                                                                                                                                                                                                                                                                                                                                                  698 CCYDGACVNNDETCEQRAAR 717
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AUTHORS:
AUTHORS:
AUTHORS:
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PAGES: 362-368
DATE: 1991
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STRANDEDNESS: Sir
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SOFTWARE: WordPerfect 3.0
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AUTHORS:
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                                                                                                                                                                                                                                                                                                                                                                                                                                   1 CCYDGASVNNDETCEQRAAR 20
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Haviland, J.C.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 109; DB 4; Length 1676; Pred. No. 1.8e-08;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0;
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Query Match

82.5%;

Score 94;

DB 4;

Length 74;

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; Sequence 13, Application US/09246500B
; Patent No. 6235494
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                                  US-09-246-500B-13
                                                        RESULT 9
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SEQ ID NO 14
LENGTH: 77
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CURRENT APPLICATION NUMBER: US/09/246,500B
CURRENT FILING DATE: 1999-02-08
NUMBER OF SEQ ID NOS: 19
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 11
                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Patent No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 14, Application US/09246500B Patent No. 6235494
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                                                                                                                                                                                                                                                                                                                                                                       CURRENT APPLICATION NUMBER: US/09/246,500B
CURRENT FILING DATE: 1999-02-08
NUMBER OF SEQ ID NOS: 19
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TITLE OF INVENTION: Substrates for Assessing Mannan-Binding
TITLE OF INVENTION: Protein-Associated Serine Protease Activity and Methods
TITLE OF INVENTION: Using the Substrates
                                                                                                                                                                                                                                                                                                                                                                     NUMBER OF SEQ ID NOS:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NAME/KEY: CARBOHYD
LOCATION: (64)...(66)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LENGTH: 7
                                                                                                                                                                                                                                                                            ORGANISM: Mouse C5a Anaphylatoxin
                                                                                                                                                                                                                                                                                                 TYPE: PRT
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                                                                                                                                                                                                      Local Similarity
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                                                                                                            CCYDGARVNFYETCEERAAR 43
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                                                                                                                                                                                                                                                                                                                                                      FastSEQ for Windows Version 4.0
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80.0%; Pred. No. 1.8e-07;
Mismatches 2;
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    Mismatches

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                                                                                                                                                                                                    Score 88; DB 4;
Pred. No. 1.1e-06;
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                                                                                                                                                                                                                   Length 77;
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US-09-246-500B-6
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FILE REFERENCE: 24730-2204
CURRENT APPLICATION NUMBER: US/09/246,500B
CURRENT FILING DATE: 1999-02-08.
NUMBER OF SEQ ID NOS: 19
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GENERAL INFORMATION:

APPLICANT: Hugli, Tony E.

TITLE OF INVENTION: Substrates for Assessing Mannan-Binding
TITLE OF INVENTION: Protein-Associated Serine Protease Activity and Methods
TITLE OF INVENTION: Using the Substrates
FILE REFERENCE: 24730-2204
CURRENT APPLICATION NUMBER: US/09/246,500B
CURRENT FILING DATE: 1999-02-08
NUMBER OF SEQ ID NOS: 19
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CURRENT FILING DATE: 199-02-08
NUMBER OF SEQ ID NOS: 19
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 8
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APPLICANT: Hugli, Tony E.
APPLICANT: Hugli, Tony E.
TITLE OF INVENTION: Substrates for Assessing Mannan-Binding
TITLE OF INVENTION: Protein-Associated Serine Protease Activity and Methods
TITLE OF INVENTION: Using the Substrates
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LENGTH: 77
TYPE: PRT
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NAME/KEY: CARBOHYD
LOCATION: (66)...(68)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ORGANISM: Rat C4a Anaphylatoxin
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                                                                                                                                                                                                                                                                                                                                                                                                                        Local Similarity
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mes 15; Conserv
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57.1%;
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75.0%;
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                                                                                                    ; FEATURE:
; NAME/KEY: CARBOHYD
; LOCATION: (66)...(68)
US-09-246-500B-9
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US-09-246-500B-9
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US-09-246-500B-7
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SEQ ID NO 9
LENGTH: 76
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                                     Matches
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                                                                  Query Match
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SEQ ID NO 7
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                                                                                                                                                                                                                                                       CURRENT APPLICATION NUMBER: US/09/246,500B
CURRENT FILING DATE: 1999-02-08
NUMBER OF SEQ ID NOS: 19
                                                                                                                                                                                                                                                                                                     TITLE OF INVENTION: Substrates for Assessing Mannan-Binding
TITLE OF INVENTION: Protein-Associated Serine Protease Activity and Methods
TITLE OF INVENTION: Using the Substrates
FILE REFERENCE: 24730-2204
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TITLE OF INVENTION: Subst
TITLE OF INVENTION: Prote
TITLE OF INVENTION: Using
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FILE REFERENCE:
                                                                                                                                                                    ORGANISM: Mouse C4a Anaphylatoxin
                                                                                                                                                                                          TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TYPE: PRT ORGANISM: Cow C4a Anaphylatoxin
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                              Local Similarity 50.0 hes 10; Conservative
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1 CCYDGAS-VNNDETCEQRAA 19
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                                              42.5%; Score 48.5; D 50.0%; Pred. No. 1.2;
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                                  Mismatches
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                                                                  DB 4;
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                                                                Length 76;
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TYPE: amino acids
TYPE: amino acid
TOPOLOGY: linear
MOLECULE TYPE: protein
US-08-447-411-2
                                                                                                                                                                                                                                            RESULT 15
US-08-972-008-4
                                                                                                                                                                                                                                                                                                                                   В
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NAME: Oblon, No. 5773243man F.

REGISTRATION NUMBER: 24,618

REFERENCE/DOCKET NUMBER: 1126-101-0

TELECOMMUNICATION INFORMATION:

TELEPHONE: (703) 413-3900

TELEPAX: (703) 413-320

TELEPAX: (703) 413-220

TELEPAX: 24885 OPAT UR

INFORMATION FOR SEQ ID NO: 2:

SEQUENCE CHARACTERISTICS:
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                                                                                                                                                             Sequence 4, Application US/08972008
Patent No. 5942420
GENERAL INFORMATION:
APPLICANT: Holtzman, Douglas A.
                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 2, Application US/08447411 Patent No. 5773243
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GENERAL INFORMATION:
                                                                        CORRESPONDENCE ADDRESS:
ADDRESSEE: LAHIVE & COCKFIELD, LLP
                                                                                                                   APPLICANT: Holtzman, Douglas A.
TITLE OF INVENTION: No. 5942420el Molecules of the Follistatin-Related
NUMBER OF SEQUENCES: 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ZIP: 22202
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 0
FILING DATE: 07-APR-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT: FRITZINGER, DAVID C.
APPLICANT: BREDEHORST, REINHARD
APPLICANT: VOGEL, CARL-WILHELM
TITLE OF INVENTION: DNA ENCODING COBRA C3, CVF1, AND CVF2
NUMBER OF SEQUENCES: 81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                               683 CCEDGMHENPMGYTCEKRA 701
                                  STREET: 28 State Street
                        STREET: 28 St
CITY: Boston
STATE: Massac
COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                             Local Similarity 52.0 nes 10; Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICATION NUMBER: US/08/447,411
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COUNTRY:
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STATE: Virginia
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   23 CCQDGVTRLPMKRSCEQRAA 42
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                   Massachusetts
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1755 S. Jefferson Davis Highway, Suite 400
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                                                                                                                                                                                                                                                                                                                                                                                                       38.2%; Score 43.5; DB 1; Length 1651; 52.6%; Pred. No. 1.8e+02; tive 1; Mismatches 7; Indels 1.
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Search completed: May 1, 2003, 22:20:26 Job time: 15 secs
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                                                                                                                                   Matches
                                                                                                                                                                   Query Match
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INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                   ATTORNEY/AGENT INFORMATION:
NAME: Amy E. MANDIAGOURAS
REGISTRATION UNMBER: 36,207
REFERENCE/DOCKET.NUMBER: MNI-
TELECOMMUNICATION INFORMATION:
TELEPHONE: (617)227-7400
TELEPHONE: (617)242-4214
                                                                                                                                                                                                                   MOLECULE TYPE: peptide FRAGMENT TYPE: internal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ZIP: UZIUS
COMPUTER READABLE FORM:
""" TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
                                                                39 CGSDGATYRDE--CELRAAR 56
                                                                                                                                 Local Similarity nes 10; Conserv
                                                                                                                                                                                                                                                       TOPOLOGY:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                          CLASSIFICATION: 435
                                                                                              1 CCYDGASVNNDETCEORAAR 20
                                                                                                                                                                                                                                                                                       LENGTH:
                                                                                                                                                                                                                                                                 amino acid
                                                                                                                                                                                                                                                                                       71 amino acids
                                                                                                                                 Conservative
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                                                                                                                                              36.8%;
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                                                                                                                                 ω
                                                                                                                                                Score 42; DB Pred. No. 11;
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Result
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Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                    Database :
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Perfect score:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Run on:
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       Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                              Score
                                           seq length: 0
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    Query
Match Length DB
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Gapop 10.0 , Gapext 0.5
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                                                                                                                                                                                                                                                                                                                                                                                                                                    283224 seqs, 96134422 residues
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GenCore version 5.1.4_p5_4578 Copyright (c) 1993 - 2003 Compugen Ltd.
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p1r2:*
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B48839
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A60379
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                                                                                                                                                                                                                                                                   SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                      3883
                                                                                                                                                                                alpha-conotoxin Ep
alpha-conotoxin EI
manganese peroxida
alpha-conotoxin SI
alpha-conotoxin Au
alpha-conotoxin Pn
               cytochrome c553 - complement C3b rec
                                CD61 homolog
                                             hypothetical prote chromogranin-B - r
                                                                                    trypsin inhibitor equinatoxin 1B - s
                                                                                                   sex-lethal protein plasma membrane ca T-cell receptor be
Ig heavy chain
      H+-transporting tw
                                      lectin,
                                                             factor X activator Ig heavy chain DJ
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                                                                                                                                                                  heat-stable entero
lambda 112 protein
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                                                                                                                                    alpha-conotoxin
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                                                                                                                                                                                                                        alpha-conotoxin
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                                      galactose/
                                                                                                                                                           protein
n III -
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A; Molecule type: protein A; Residues: 1-16 <LOU>

A; Status: preliminary

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17.5	17.5	18.4	18.4	18.4	18.4	18.4	18.4	L8.4	18.4	18.4	10.4	10.4	10	18.4	18.4	18.4	
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865395	D61512	S48746	D25507	JT0410	S65435	A49254	A21182	C21182	JU0125	T58087	1/9565	/ FT074		0 C O D V H	B54877	C59045	
chemical-sense-rel	variant surface of	beta tubulin h-bet	proteinage inhibit	bombyxin-TV chair	manganese perovida	TOR delta chain V-	4K prothoracicotro	4K prothoracicotro	polyphemusin II -	ryanodine receptor	吕	protein kinase, 80	r-cerr receptor be	٠,	a inha-conotoxia pa	alpha-conotoxin Au	

# ALIGNMENTS

alpha-conotoxin EpI - cone shell (Conus episcopatus)
C;Species: Conus episcopatus (bishop's cone)
C;Date: 23-Jul-1999 #sequence\_revision 23-Jul-1999 #text\_change 13-Aug-1999

C; Accession: A59042 R; Loughnan, M.; Bon A59042

R:Loughnan, M.; Bond, T.; Atkins, A.; Cuevas, J.; Adams, D.J.; Broxton, N.M.; Livett, J. Biol. Chem. 273, 15667-15674, 1998
A;Title: Alpha-conotoxin EpI, a novel sulfated peptide from Conus episcopatus that se A;Reference number: A59042; MUID:98288307; PMID:9624161
A;Accession: A59042

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C:Superfamily: alpha-conotoxin
C:Keywords: acetylcholine receptor inhibitor; amidated carboxyl end; hydroxyproline;
F:3/Modified site: 4-hydroxyproline (Pro) #status experimental
F:4-10,5-18/Disulfide bonds: #status experimental
                                               F;18/Modified site: amidated carboxyl end (Cys) #status experimental
                                                                                                                                                                           A;Molecule type: protein
A;Residues: 1-18 <MAR>
A;Residues: 1-18 <MAR>
A;Note: sequence confirmed by chemical synthesis
C;Comment: This alpha-conotoxin, as an acetylcholine receptor inhibitor, is a postsyn
                                                                                                                                                                                                                                                                                                                     A:Title: alpha-Conotoxin EI, a new nicotinic acetylcholine receptor antagonist with n A:Reference number: A58589; MUID:96062516; PMID:7578057
A:Accession: A58589
                                                                                                                                                                                                                                                                                                                                                                                alpha-conotoxin EI - cone shell (Conus ermineus)
(Species: Conus ermineus (ermine cone)
C;Date: 10-Sep-1999 #sequence_revision 10-Sep-1999 #text_change 10-Sep-1999
C;Accession: A58589
R;Martinez, J.S.; Olivera, B.M.; Gray, W.R.; Craig, A.G.; Groebe, D.R.; Abramson, S.N
Biochemistry 34, 14519-14526, 1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         C; Superfamily: alpha-conotoxin
C; Superfamily: alpha-conotoxin
C; Keywords: acetylcholine receptor inhibitor; amidated carboxyl end; postsynaptic neu
F; 1-16/Product: alpha-conotoxin EpI #status experimental <MAT>
F; 2-8, 3-16/Disulfide bonds: #status experimental
F; 15/Binding site: sulfate (Tyr) (covalent) #status experimental
F; 15/Binding site: sulfate (Tyr) (covalent) #status experimental
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              Query Match
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           25.98;
        Score 29.5;
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     DB 1;
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Length 18;
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A; Title: Alpha-conotoxin AuIB selectively blocks alpha3beta4 nicotinic acetylcholine red
A; Reference numbar: A59045; MUID:99003392; PMID:9786965
                                                                                                alpha-conotoxin AuIA - cone shell (Conus aulicus)
C;Species: Conus aulicus (court cone)
C;Date: 23-7ull-1999 #sequence_revision 23-Jul-1999 #text_change 23-Jul-1999
C;Accession: A59045
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               C; Superfamily: alpha-conotoxin C; Keywords: acetylcholine receptor inhibitor; amidated carboxyl end; postsynaptic neurot F; 2-7, 3-13/Disulfide bonds: #status experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        R:Myers, R.A.; Zafaralla, G.C.; Gray, W.R.; Abbott, J.; Cruz, L.J.; Olivera, B.M. Biochemistry 30, 9370-9377, 1991
A;Title: alpha-Conotoxins, small peptide probes of nicotinic acetylcholine receptors. A;Reference number: A40312; MUID:91369955; PMID:1892838
A;Accession: A40312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            alpha-conotoxin SIA - cone shell (Conus striatus)
C;Species: Conus striatus (striated cone)
C;Date: 30-Sep-1992 #sequence_revision 30-Sep-1992 #text_change 23-May-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 R;Pease, E.A.; Tien, M.
J. Bacteriol. 174, 3532-3540, 1992
A;Title: Heterogeneity and regulation of manganese peroxidases from Phanerochaete chrysc A;Reference number: A44907; MUID:92276331; PMID:1592808
A;Accession: B44907
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  manganese peroxidase (EC 1.11.1.13) H3 - basidiomycete (Phanerochaete chrysosporium) (fd
C;Species: Phanerochaete chrysosporium
C;Date: 03-Feb-1994 #sequence_revision 03-Feb-1994 #text_change 06-Dec-1996
                                                R;Luo, S.; Rulak, J.M.; Cartier, G.E.; Jacobsen, R.B.; Yoshikami, D.; Olivera, B.M.; McJ. Neurosci. 18, 8571-8579, 1998
                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Note: sequence extracted from NCBI backbone (NCBID:104607) C; Superfamily: lignin peroxidase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          F;13/Modified site: amidated carboxyl end (Cys) #status experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Residues: 1-13 <MYE>
C; Comment: This paralytic toxin from a fish-hunting cone snail inhibits the acetylcholin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Molecule type: protein A; Residues: 1-13 <MYE>
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              C; Keywords: extracellular protein; glycoprotein; heme; oxidoreductase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Molecule type: protein A; Residues: 1-20 <PEA>
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Matches 5; Conserv
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Pred. No. 7.3e+02;
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                                                                                                                                                                                                                                                                                                                                                                                                                                    9.8e+02;
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A; Status: prelimina:
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idues of the heat-stable enterotoxin ST-I. C;Superfamily: heat-stable enterotoxin ST C;Keywords: enterotoxin, heat-stable protein F;1-18/Product: heat-stable enterotoxin ST-2 #status experimental <MAT>F;5-10,6-14,9-17/Disulfide bonds: #status predicted
                                                                                                                                                                                                                                                                                                    J. Biol. Chem. 256, 7744-7746, 1981
A;Title: Amino acid sequence of heat-stable enterotoxin produced by Escherichia coli A;Reference number: A01823; MUID:81264141; PMID:7021541
A;Accession: A01823
                                                                                                                                                                A; Experimental source: strain 18D, serotype 0.42:k86:H37 C; Comment: This enterotoxin is one of several, of differing molecular sizes, produced
                                                                                                                                                                                                                                     A; Molecule type: protein A; Residues: 1-18 <CHA>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Molecule type: protein
A; Residues: 1-16 <FAI)
R; Residues: 1-16 <FAI)
R; Hu, S.H.; Gehrmann, J; Guddat, L.W.; Alewood, P.F.; Craik, D.J.; Martin, submitted to the Brookhaven Protein Data Bank, January 1996
A; Reference number: A66355; PDB:1PEN
A; Reference number: A66355; PDB:1PEN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     R;Fainzilber, M.; Hasson, A.; Oren, R.; Burlingame, A.L.; Gordon, D.; Spira, M.E.; Zl Blochemistry 33, 9523-9529, 1994
A;Title: New mollusc-specific alpha-conotoxins block Aplysia neuronal acetylcholine r A;Reference number: A54877; MUID:94347719; PMID:8068627
A;Accession: A54877
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       C;Date: 06-Jul-1982 #sequence_revision 06-Jul-1982 #text_change 31-Dec-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              C; Species: Escherichia coli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    alpha-conotoxin PnIA [validated] - cone shell (Conus pennaceus)
N;Alternate names: alpha-CTx-PnIA
C;Species: Conus pennaceus
C;Date: 19-Mar-1997 #sequence_revision 25-Apr-1997 #text_change 15-Sep-2000
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                                                                                                                                                                                                                                                                                                                                                                                                                                         R; Chan, S.K.; Giannella, R.A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          heat-stable enterotoxin ST-2 - Escherichia coli
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A; Residues: 1-16 <LUO>
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    Mismatches

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Pred. No. 1.7e+03;
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Pred. No. 1.7e+03;
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A:Molecule type: protein
A:Residues: 1-16 <KAN>
C:Keywords: glycosyltransferase; hexosyltransferase
                                                                                                                                                           A; Reference number: PD0002
A; Accession: PD0002
                                                                                                                                                                                R;Kang, S.I.; Kim, W.P.; Chang, Y.J.; Kim, S.I.
Blosci. Biotechnol. Biochem. 62, 628-631, 1998
A;Title: Purification and properties of inulin fructotransferase (DFA III-producing) from the control of t
                                                                                                                                                                                                                                                                                                                                                   C:Species: Bacillus sp.
C:Date: 10-Jul-1998 #sequence_revision 10-Jul-1998 #text_change 03-Jun-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                   inulin fructotransferase (depolymerizing, difructofuranose-1,2':2,3'-dianhydride-forming
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C:Date: 19-Nov-1993 #sequence_revision 18-Nov-1994 #text_change 23-Mar-1995
C:Accession: A48389
R:Valdivia, H.H.; Martin, B.M.; Escobar, L.; Possani, L.D.
Biochem. Int. 27, 953-962, 1992
A:Ritle: Noxiustoxin and ledurutoxin III, two homologous peptide toxins with binding pro A:Reference number: A48389; MUID:93075256; PMID:1280139
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A;Title: Krabbe disease: isolation and characterization of a full-length cDNA for human A;Reference number: JC2397; MUID:94128088; PMID:8297359
A;Accession: PC2248
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A; Residues: 1-20 <SAK>
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C:Date: 20-Feb-1995 #sequence_revision 20-Feb-1995 #text_change 17-Sep-1997
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100.0%; F1
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    Mismatches

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C; Species:
Ig heavy chain DJ region (clone C527-112) - human (fragment)
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В
                                                                                                                                                                                                                  C;Superfamily: alpha-conotoxin
C;Keywords: acetylcholine receptor inhibitor; amidated carboxyl end; postsynaptic neu
F;3-8,4-14/Disulfide bonds: #status experimental
                                                                                                                                                                                                         F;14/Modified site: amidated carboxyl end (Cys) #status experimental
                                                                                                                                                                                                                                                                                                                                A;Molecule type: protein
A;Residues: 1-14 (MCT)
R;Gray, M.R.; Rivier, J.E.; Galyean, R.; Cruz, L.J.; Olivera, B.M.
J. Biol. Chem. 258, 12247-12251, 1983
A;Title: Conotoxin MI. Disulfide bonding and conformational states.
A;Reference number: A92396; MUID: B40324400; PMID: 6630187
RESULT 13
                                                                                                                                                                                                                                                                            A;Contents: annotation; disulfide bonds
C;Comment: This alpha-conotoxin, as an acetylcholine receptor inhibitor, is a postsyn
                                                                                                                                                                                                                                                                                                                                                                                                                                                         R:MCINTOSh, M.; Cruz, L.J.; Hunkapiller, M.W.; Gray, W.R.; Olivera, B.M. Arch. Biochem. Biophys. 218, 329-334, 1982
A;Title: Isolation and structure of a peptide toxin from the marine snail Conus magus A;Reference number: A90071; MUID:83073458; PMID:7149738
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    C;Date: 18-Apr-1984 #sequence_revision 18-Apr-1984 #text_change 16-Jul-1999 C;Accession: A01784
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          C; Species: Conus magus (magus cone)
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C;Species: Hordeum vulgare (barley)
C;Date: 19-Mar-1997 #sequence_revision 17-Jul-1998 #text_change 07-May-1999
C;Accession: S28215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Experimental source: cultivar Clipper
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Blochem. J. 289, 453-461, 1993
A;Title: Purification and properties of three (1->3)-beta-D-glucanase isoenzymes from A;Reference number: S28214; MUID:93143715; PMID:8424790
A;Accession: S28215
                                                                                                                                                                                   Query Match
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                                                                                                    1 CCYDGASVN 9
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Local Similarity 50.0%;
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les 5; Conserv
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50.0%;
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Pred. No. 3e+03;
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Pred. No. 2.6e+03;
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Pred. No. 2.4e+03;
"'' *matches 4;
                                                                                                                                    Mismatches
                                                                                                                                                                     Length 14;
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Homo sapiens (man)

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C;Date: 30-Sep-1993 #sequence_revision 30-Sep-1993 #text_change 07-May-1999 C;Accession: PH1317
C;Accession: PH1317
C;Resserman, R.; Galili, N.; Ito, Y.; Reichard, B.A.; Shane, S.; Rovera, G.
J. Exp. Med. 176, 1577-1581, 1992
A;Title: Predominance of fetal type DJH joining in young children with B precursor lymph A;Reference number: PH1302; MUID:93094761; PMID:1460419
A;Recession: PH1317
A;Molecule type: DNA
A;Residues: 1-16 <MAS>
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D49570
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C;Species: Drosophila melanogaster
C;Date: 15-Feb-1996 #sequence_revision 01-Mar-1996 #text_change 17-Mar-1999
C;Accession: 560171
R;Hoshijima, K.; Kohyama, A.; Watakabe, I.; Inoue, K.; Sakamoto, H.; Shimura, Y.
Nucleic Acids Res. 23, 3441-3448, 1995
A;Title: Transcriptional regulation of the Sex-lethal gene by helix-loop-helix proteins.
A;Reference number: 560171; MUID:96032836; PMID:7567454
A;Accession: 560171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             plasma membrane calcium pump - human (fragment)
C;Species: Homo sapiens (man)
C;Date: 07-Apr-1994 #sequence_revision 18-Nov-1994 #text_change 12-Dec-1997
C;Accession: D49570
R;Stauffer, T.P.; Hilfiker, H.; Carafoli, E.; Strehler, E.E.
J. Biol. Chem. 268, 25993-26003, 1993
A;Title: Quantitative analysis of alternative splicing options of human plasma membrane A;Reference number: A49570; MUID:94064681; PMID:8245032
A;Accession: D49570
                                                                                                                                                                                         A:Note: sequence inconsistent with nucleotide translation A;Note: sequence extracted from NCBI backbone (NCBIN:139934, NCBIP:139939) C;Superfamily: Na+/K+-transporting ATPase alpha chain; ATPase nucleotide-binding domain C;Keywords: ATP
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C; Keywords: heterotetramer; immunoglobulin
                                                                                                                                                                                                                                                                                                                                                                                                                                            A; Molecule type: mRNA
A; Residues: 1-18 <STA>
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A;Cross-references: FlyBase:FBgn0003659
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A; Residues: 1-17 <HOS>
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Status: preliminary
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3; Conservative
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                                         20.2%; Score 23; DB 2; Length 18; 75.0%; Pred. No. 3.9e+03;
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Pred. No. 3.7e+03;
1; Mismatches 1
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Pred. No. 3.4e+03;
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CXA1_CONEP
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Best Local
 P50982;
01-0CT-1996 (Rel. 34, Created)
01-0CT-1996 (Rel. 34, Last sequence update)
15-JUN-2002 (Rel. 41, Last annotation update)
Alpha-conotoxin
                                                                                                                                                                    MOD_RES
MOD_RES
SEQUENCE
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MEDLINE-98376423; PubMed-9708977;

Hu S.H., Loughnan M., Miller R., Weeks C.M., Blessing R.H.,
Alewood P.F., Lewis R.J., Martin J.L.;

"The 1.1-A resolution crystal structure of [Tyr15]EpI, a novel
alpha-conotoxin from Conus episcopatus, solved by direct methods.";
alpha-conotoxin from Conus episcopatus, solved by direct methods.";
-1- FUNCTION: ALPHA-CONOTOXINS ACT ON POSTSYNAPTIC MEMBRANES, THEY
INHIBIT THEM. THIS PERTIDE BLOCKS MAMMALIAN NICOTINIC
ACETYLCHOLINE RECEPTORS COMPOSED OF ALPHA-3/BETA-2 AND ALPHA-
                                                                                                                                                                                                  DISULFID
                                                                                                                                                                                                                  Sulfation;
                                                                                                                                                                                                                       Postsynaptic neurotoxin; Neurotoxin; Toxin; Acetylcholine receptor inhibitor; Amidation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                  CXXI_CONEP STANDARD; PRT; 16 AA. P55638; 15-DEC-1998 (Rel. 37, Created) 15-DEC-1998 (Rel. 37, Last sequence update) 15-JUN-2002 (Rel. 41, Last annotation update) Alpha-conotoxin Epi.
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Bukaryota; Metazoa; Mollusca; Gas
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les 6; Conser
                                                                                                          1 CCYD-GASVNNDETC 14
                                                                                          2 CCSDPRCNMNNPDYC 16
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SUBCELLULAR LOCATION: Secreted.
TISSUE SPECIFICITY: Expressed b
                                                                                                                                                                                                                                                       TISSUE SPECIFICITY: Expressed by the venom duct.
SIMILARITY: BELONGS TO THE A-SUPERFAMILY OF CONOTOXINS. ALPHA-TYPE
                                                                                                                                                                                                                                             1A0M; 13-JAN-99.
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15 15

16 16
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Pred. No. 48;
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C63385F376C99B4C CRC64;
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CXMB_CONPE
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GUAN_DIDMA
ARCD_PSEPU
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PPCK_FASHE
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                                                                                                                            Mismatches
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                                                                                                                                          DB 1; Length 16;
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P56573
P55936
P41147
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Matches 5;
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01-MAR-1992 (Rel. 21, Created)
01-MAR-1992 (Rel. 21, Last sequence update)
15-JUN-2002 (Rel. 41, Last annotation update)
Trypsin inhibitor B chain (Fragment).
Albizzia julibrissin (Silk tree).
Albizzia yulibrissin (Silk tree).
                                                                                                                                                                              Odani S., Ono T., Ikenaka T.;
"Proteinase inhibitors from a mimosoideae legume, Albizzia
julibrissin. Homologues of soybean trypsin inhibitor (Kunitz).";
J. Biochem. 86:1795-1805(1979).
-!- FUNCTION: INHIBITS TRYPSIN AND ALPHA-CHYMOTRYPSIN.
-!- SUBUNIT: HETERODIMER OF AN "A" AND A "B" CHAIN LINKED BY A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 "Alpha-conotoxin EI, a new nicotinic acetylcholine receptor antagonist with novel selectivity"; Biochemistry 34:14519-14526(1995).
-I- FUNCTION: ALPHA-CONOTOXINS ACT ON POSTSYNAPTIC MEMBRANES,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Martinez J.S., Olivera B.M., Gray W.R., Craig A.G., Groebe D.R., Abramson S.N., McIntosh J.M.;
                                                                                                                                                                                                                                                                                                                                                    Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; Rosideurosids I; Fabales; Fabaceae; Mimosoideae; Ingeae; Albizia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conus ermineus (Atlantic fish-hunting cone).
Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;
                                                                                                                                                                                                                                                                                             TISSUE-Seed;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MOD_RES
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MEDLINE=96062516; PubMed=7578057;
                                                                                                                       Serine protease inhibitor.
                                                                                                                                                                                                                                                                            MEDLINE=80115605; PubMed=528539;
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                                                                                            SEQUENCE
                                                                                                          NON_TER
                                                                                                                                                                                                                                                                                                          SEQUENCE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 CCY-DGASVNNDETC 14
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2 CYDGASVNNDE 12
                                                                                                                                                    SIMILARITY: BELONGS TO THE LEGUMINOUS KUNITZ-TYPE INHIBITOR
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TISSUE SPECIFICITY: Expressed by
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BIND TO THE NICOTINIC ACETYLCHOLINE RECEPTORS (NACHR) AND INHIBIT THEM.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SIMILARITY: BELONGS TO THE A-SUPERFAMILY OF CONOTOXINS. ALPHA-TYPE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SUBUNIT: Binds nicotinic acetylcholine receptor.
                                                                                                                                       FAMILY
                                                                                                                                                                      DISULFIDE BOND.
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                                              Similarity
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                                 Conservative
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                                              25.4%;
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                                              Score 29; DB 1;
Pred. No. 1.1e+02;
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Pred. No. 1.
                                                                                            53165F7E9C45B4D0 CRC64;
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Best Local Similarity
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Luo S., Kulak J.M., Cartler G.E., Jacobsen R.B., Yoshikami D.,
Olivera B.M., McIntosh J.M.;
"Alpha-conotoxin AuIB selectively blocks alpha3 beta4 nicotinic
acetylcholine receptors and nicotine-evoked norepinephrine release.";
J. Neurosci. 18:8571-8579(1998).
-i- FUNCTION: ALPHA-CONOTOXINS ACT ON POSTSYNAPTIC MEMBRANES, THEY
BIND TO THE NICOTINIC ACETYLCHOLINE RECEPTORS (NACHR) AND THUS
INHIBIT THEM. THIS PEPTIDE BLOCKS MAMMALIAN NICOTINIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      P28878;
01-DEC-1992 (Rel. 24, Created)
01-DEC-1992 (Rel. 24, Last sequence update)
15-JUN-2002 (Rel. 41, Last annotation update)
Alpha-conotoxin SIA (SIA)
                                                                                                                                                                                                                                                  P56639;
15-DEC-1998 (Rel. 37, Created)
15-DEC-1998 (Rel. 37, Last sequence update)
15-JUN-2002 (Rel. 41, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Acetylcholine receptor inhibitor; Amidation DISULFID 2 7 DISULFID 3 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CONST
                                                                                                                                                                                           Conus aulicus (Court cone).
Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;
Neogastropoda; Conoidea; Conidae; Conus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Biochemistry 30:9370-9377(1991).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               "Alpha-conotoxins, small peptide probes of nicotinic acetylcholine receptors.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Myers R.A., Zafarella G.C., Gray W.R., Abbot J., Cruz L.J., Olivera B.M.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MEDLINE=91369955; PubMed=1892838;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eukaryota; Metazoa; Mollusca;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conus striatus (Striated cone)
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                                                                                                                                                                                                                                          Alpha-conotoxin AuIA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NCBI_TaxID=6493;
                                                                                                                      MEDLINE=99003392; PubMed=9786965;
                                                                                                                                    TISSUE-Venom;
                                                                                                                                                SEQUENCE, SYNTHESIS, AND MASS SPECTROMETRY
                                                                                                                                                                              NCBI_TaxID=89437;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Postsynaptic neurotoxin; Neurotoxin; Toxin
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TISSUE SPECIFICITY: Expressed by the venom duct. SIMILARITY: BELONGS TO THE A-SUPERFAMILY OF CONOTOXINS. ALPHA-TYPE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BIND TO THE NICOTINIC ACETYLCHOLINE RECEPTORS (NACHR) AND THUS INHIBIT THEM.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                   STANDARD;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1461 MW;
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Pred. No. 2.9e+02;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DEF1931982457EBD CRC64;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gastropoda; Caenogastropoda;
                                                                                                                                                                                                                                                                                                                    PRT;
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                                                                                                                                                                                                                                                                                                                   16 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                    6; Indels
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Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Wolfender J.L., Chu F., Ball H., Wolfender F., Fainzilber M., Baldwin M.A., Burlingame A.L.; "Identification of tyrosine sulfation in Conus pennaceus conotoxins alpha-PnIA and alpha-PnIB: further investigation of labile sulfo- are phosphopeptides by electrospray, matrix-assisted laser desorption/ionization (MALDI) and atmospheric pressure MALDI mass spectrometry.";
   PDB;
                                                                                                                                                                                                                                                                              antagonist, alpha-conotoxin PnIA from Conus pennaceus.", Structure 4:417-423(1996).
                                                                                                                                                                                                                                                                                                                                                                                    X-RAY CRYSTALLOGRAPHY (1.1 ANGSTROMS).
MEDLINE-96311277; PubMed-8740364;
MEDLINE-96311277; PubMed-96311277; 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    01-OCT-1996 (Rel. 34, Created)
01-OCT-1996 (Rel. 34, Last sequence up
15-JUN-2002 (Rel. 41, Last annotation
Alpha-conotoxin PnIA.
Conus pennaceus (Feathered cone).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            acetylcholine receptors.";
Blochemistry 33:9523-9529(1994).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Eukaryota, Metazoa, Mollusca; Gastropoda; Caenogastropoda;
Neogastropoda; Conoidea; Conidae; Conus.
NCBL_TaxID=37335;
                                                                                                                                                                                                                                                                                                                                                                        Martin J.L.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SULFATION OF TYR-15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MEDLINE-94347719; PubMed-8068627;
Fainzilber M., Hasson A., Oren R., Burlingame A.L.,
Spira M.E., Zlotkin E.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MEDLINE-99242956;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  "New mollusc-specific alpha-conotoxins block Aplysia neuronal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TISSUE-Venom,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       P50984;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CXAA_CONPE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Acetylcholine receptor inhibitor; Amidation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Postsynaptic neurotoxin; Neurotoxin; Toxin;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mass Spectrom. 34:447-454(1999).
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                                                                  BIND TO THE NICOTINIC ACETYLCHOLINE RECEPTORS (NACHR) AND THUS-
INHIBIT THEM. IN CONTRAST TO OTHER ALPHA-CONOTOXINS, WHICH ARE
SELECTIVE FOR VERTEBRATE SKELETAL MUSCLE NACHR, THE CONUS
PENNACEUS ALPHA-CONOTOXINS BLOCK NACHR IN MOLLUSKS.
SUBCELLULAR LOCATION: Secreted.
TISSUE SPECIFICITY: Expressed by the venom duct.
                                             SIMILARITY: BELONGS TO THE A-SUPERFAMILY OF CONOTOXINS. ALPHA-TYPE
                                                                                                                                                                                                                                                FUNCTION: ALPHA-CONOTOXINS ACT ON POSTSYNAPTIC MEMBRANES, THEY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TISSUE SPECIFICITY: Expressed by the venom duct.

MASS SPECTROMETRY: MW-1725.6; METHOD-Electrospray.

SIMILARITY: BELONGS TO THE A-SUPERFAMILY OF CONOTOXINS. ALPHA-TYPE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACETYLCHOLINE RECEPTORS COMPOSED OF ALPHA-3/BETA-4 SUBUNITS SUBCELLULAR LOCATION: Secreted.
1PEN; 21-APR-97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CCYDGASVNNDETC 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               P50984; 1PEN.
                                                                                                                                                                                                                                                                                                                                 1 A crystal structure of the neuronal acetylcholine receptor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PubMed-10226369;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 25; I
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1E310FEB8FDC7001 CRC64;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches
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                                                                                                 Matches
                                                                                                                           Query Match
Best Local
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Shimonishi Y., Hidaka Y., Koizumi M., Hane M., Aimoto S., Takeda T., Miwatani T., Takeda Y., "Mode of disulfide bond formation of a heat-stable enterotoxin (STh) produced by a human strain of enterotoxigenic Escherichia coli."; FEBS Lett. 215:165-170(1987).
                                                                                                                                                                                                    SEQUENCE
                                                                                                                                                                                                                                                     DISULFID
                                                                                                                                                                                                                                                                                  DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Chan S.-K., Giannella R.A.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   21-JUL-1986 (Rel. 01, Last sequence update) 15-JUN-2002 (Rel. 41, Last annotation update) Heat-stable enterotoxin ST-2 (ST-B).
                                                                                                                                                                                                                                                                                                                           PROSITE; PS00273; ENTEROTOXIN_H_STABLE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Acetylcholine receptor inhibitor; Amidation; Sulfation; 3D-structure.
DISULFID 8
DISULFID 3 16
MOD_RES 15 15 SULFATION.
MOD_RES 16 16 AMIDATION.
                                                                                                                                                                                                                                                                                                        Poxin;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDLINE=87191003; PubMed=3552731;
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21-JUL-1986 (Rel. 01, Created)
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                                                                                                                                                                                                                                                                                                                                                                                   [nterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        "Amino acid sequence of heat-stable enterotoxin produced by 3scherichia coli pathogenic for man."; J. Biol. Chem. 256:7744-7746(1981).
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9
                                             1 CCY 3
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FUNCTION: TOXIN WHICH ACTIVATES THE PARTICULATE FORM OF GUANYLATE CYCLASE AND INCREASES CYCLIC GMP LEVELS WITHIN THE HOST INTESTIALAL EPITHELIAL CELLS.

DISEASE: BOTH HEAT-STABLE AND HEAT-LABILE ENTEROTOXINS ARE PRODUCED BY PATHOGENIC STRAINS OF E.COLI AND AFFECT THE DIGESTIVE
                                                                                                                                                                                                                                                                                                                                                                                                                                                          SIMILARITY: BELONGS TO THE HEAT-STABLE ENTEROTOXIN FAMILY
CCY 11
                                                                                                                                                                                                                                                                                                                                                                                                                                 A01823; QHEC2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TRACT OF MAMMALS
                                                                                                                                                                                                                                                                                                                                                      PF02048; Enterotoxin_HS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CSLPPCAANNPDYC
                                                                                                                                                                                                                                                                                                                                                                                                      P01559;
                                                                                                                                                                                                                                                                                                     Enterotoxin.
                                                                                                                         Similarity
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                                                                                                                                                                                                                                                                                                                                                                           IPR001489; Enterotoxin_HS.
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                                                                                                                                                                                                                                                                                                                                                                                                            LETN.
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                                                                                                                                                                                                  1978 MW;
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14
                                                                                                                   21.9%; Score 25; 100.0%; Pred. No.
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                                                                                                 0;
                                                                                                                                                                                               D0C975F49D600650 CRC64;
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Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        05310FF95EC99005 CRC64;
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                                                                                                 Mismatches
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5.1e+02;
8;
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                                                                                                                                              Length 18
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RESULT 8

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LCRP_PETMA
ID LCRP_PA
AC 01096
DT 01-OCT
DT 15-JUN
DE COTTIC
OS PETTON
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               Matches
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Best Local Similarity
                                                                                                                                                  InterPro; IPR001947; Scorpion_toxinS.
PROSITE; PS01138; SCORP_SHORT_TOXIN; PARTIAL.
NeuroCoxin; Potassium channel inhibitor.
                                                                                                                                                                                                                                           Valdivia H.H., Martin B.M., Escobar L., Possani L.D.;
"Noxiustoxin and leiurutoxin III, two homologous peptide toxins with binding properties to synaptosomal membrane K+ channels.";
Biochem. Int. 27:953-962(1992)
-!- FUNCTION: BLOCKER OF POTASSIUM CHANNELS.
-!- SUBCELLULAR LOCATION: Secreted.
-!- SIMILARITY: BELONGS TO THE SHORT SCORPION TOXIN FAMILY. POTASSIUM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    p45661;
01-NOV-1995 (Rel. 32, Created)
01-NOV-1995 (Rel. 32, Last sequence update)
15-JUN-2002 (Rel. 41, Last annotation update)
Leiurutoxin III (Fragment).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Leiurus quinquestriatus quinquestriatus (Egyptian scorpion).
Eukaryota; Metazoa; Arthropoda; Chelicerata; Arachnida; Scorpiones;
Euthoidea; Buthidae; Leiurus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Q10996;
Q10-96;
Q10-CT-1996 (Rel. 34, Last sequence update)
Q1-OCT-1996 (Rel. 34, Last sequence update)
Q1-CT-1996 (Rel. 41, Last annotation update)
Q0rticostatin-related protein LCRP.
Petromyzon marinus (Sea lamprey).
Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Hyperoartia;
                                                                                                                                                                                                                                                                                                                                                                                                                                  MEDLINE=93075256; PubMed=1280139;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   -!- MASS SPECTROMETRY: MW=2201; MW_ERR=0.4; METHOD=Electrospray.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MEDLINE=96321324; PubMed=8759287;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TISSUE=Skin;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Petromyzontiformes; Petromyzontidae; Petromyzon.
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                               Local Similarity
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MASS SPECTROMETRY: MW-2201; MW_ERR-0.4; METHOD-Electrospray.
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                                                                                                           14 AA; 1588 MW;
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             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
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                               21.1%; 35.7%;
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9
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50.0%;
                            Score 24;
Pred. No. 6
                                                                                                     83C67CCBD691205E CRC64;
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8D9CEDC71A199AE5 CRC64;
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                            6.3e+02;
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RESULT 11
CXA1_CONMA
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Best Local 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
-!- SUBCELLULAR LOCATION: Secreted.
-!- TISSUE SPECIFICITY: Expressed by the venom duct.
-!- SIMILARITY: BELONGS TO THE A-SUPERFAMILY OF CONOTOXINS. ALPHA-TYPE
                                                 MEDLINE-84032400; PubMed-6630187;
Gray W.R., Rivier J.E., Galyean R., Cruz L.J., Olivera B.M.;
"Conotoxin MI. Disulfide bonding and conformational states.";
J. Biol. Chem. 258:12247-12251(1983).

- FUNCTION: ALPHA-CONOTOXINS ACT ON POSTSYNAPTIC MEMBRANES,
BIND TO THE NICOTINIC ACETYLCHOLINE RECEPTORS (NACHR) AND
INHIBIT THEM.
                                                                                                                                                                                                                                                                                                                                                                                     CXA1_CONMA STANDARD; PRT; 14 AA P01521; 21-JUL-1986 (Rel. 01, Created) 21-JUL-1986 (Rel. 01, Last sequence update) 15-JUN-2002 (Rel. 41, Last annotation updat
                                                                                                                                                                                                                            MEDLINE=83073458; PubMed=7149738; McIntosh J.M., Cruz L.J., Hunkapiller M.W., "Isolation and structure of a peptide toxin
                                                                                                                                                                                                                                                                                                                              Conus magus (Magus cone).
Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;
Neogastropoda; Conoidea; Conidae; Conus.
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SEQUENCE
                                                                                                                                                                  DISULFIDE BONDS
                                                                                                                                                                                             Conus magus.";
Arch. Biochem. Biophys. 218:329-334(1982).
                                                                                                                                                                                                                                                                                                                                                                               Alpha-conotoxin MI (M1).
                                                                                                                                                                                                                                                                                     SEQUENCE
                                                                                                                                                                                                                                                                                                                  NCBI_TaxID=6492;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Membrane; Microsome.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Plant Physiol. 0:0-0(2002).
-!- FUNCTION: May have spermidine-binding activity.
-!- SUBUNIT: Dimer of 18 Kba and 60 Kba subunit (Probable).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STRAIN-cv. Cecilia; TISSUE-Coleoptile; Tassoni A., Napier R.M., Franceschetti M., Venis M.A., Bagni N.; "Spermidine-binding proteins: purification and expression analysis in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; PACC cl Panicoideae; Andropogoneae; Zea.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  15-JUN-2002 (Rel. 41, Created)
15-JUN-2002 (Rel. 41, Last sequence update)
15-JUN-2002 (Rel. 41, Last sequence update)
15-JUN-2002 (Rel. 41, Last annotation update)
Putative 60 kDa spermidine-binding protein (Fragment).

Tea mays (Maize).
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20 AA; 2093 MW;
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40.0%;
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Pred. No. 9.1e+02;
Pred. No. 7;
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from the marine snail
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MEDLINE-99158061; PubMed-10050774;
Maslennikov I.V., Shenkarev Z.O., Zhmak M.N., Ivanov V.T.,
Methfessel C., Tsetlin V.I., Arseniev A.S.;
"NMR spatial structure of alpha-conotoxin ImI reveals a common scaffold in snail and snake toxins recognizing neuronal nicotinic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ol-OCT-1996 (Rel. 34, Createu)
Ol-OCT-1996 (Rel. 34, Last sequence update)
15-JUN-2002 (Rel. 41, Last annotation update)
Alpha-conotoxin ImI.
Conus imperialis (Imperial cone).
Therrorta: Metazoa, Mollusca, Gastropoda; (
                                                                                                                                                                                                          "NMR solution structure of alpha-conotoxin ImI and comparison to other conotoxins specific for neuronal nicotinic acetylcholine receptors.";
                                                                                           "Solution structure of alpha-conotoxin ImI determined two-dimensional NMR spectroscopy."; Biochim. Biophys. Acta 1431:384-394(1999).
                                                                                                                                         Souda H., Hirono S.;
                                                                                                                                                         PubMed=10350614;
                                                                                                                                                                   STRUCTURE BY NMR.
                                                                                                                                                                                             Biochemistry
                                                                                                                                                                                                                                              Rogers J.P., Luginbuehl P., Shen Wemmer D.E.;
                                                                                                                                                                                                                                                                  STRUCTURE BY NMR.
MEDLINE-99212205; PubMed-10194298;
                                                                                                                                                                                                                                                                                                                       acetylcholine receptor blockade: preferential inhibition alpha 7 and alpha 9 receptors.",
                                                                                                                                                                                                                                                                                                                                               "Alpha-conotoxin ImI exhibits subtype-specific nicotinic
                                                                                                                                                                                                                                                                                                                                                                     McIntosh J.M.;
                                                                                                                                                                                                                                                                                                                                                                            Johnson D.S., Martinez J.,
                                                                                                                                                                                                                                                                                                                                                                                        CHARACTERIZATION.
MEDLINE~95379776; PubMed-7651351;
                                                                                                                                                                                                                                                                                                                                                                                                                                           "A nicotinic acetylcholine receptor ligand of unique specificity, alpha-conotoxin {\tt ImI."};
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eukaryota; Metazoa; Mollusca; Gastropoda
Neogastropoda; Conoidea; Conidae; Conus.
NCBI_TaxID=35631;
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P50983;
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Postsynaptic neurotoxin; Neurotoxin; Toxin; Acetylcholine receptor inhibitor; Amidation.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Local Similarity hes 3; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                               Biol. Chem. 269:16733-16739(1994)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 CCYDGASVN 9
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                                                                                                                                                                                                                                                                                                             Pharmacol. 48:194-199(1995).
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33.3%;
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Pred. No.
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ches 5;
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                                                                                                                                                                                                                                                                                                                                   of homomeric
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UNO1
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UNOI_PINPS STANDARD; PRT; 15 AA.
P81106;
P81106;
15-JUL-1998 (Rel. 36, Created)
15-JUL-1998 (Rel. 36, Last sequence update)
15-JUL-1999 (Rel. 38, Last annotation update)
Unknown protein from 2D-page of needles (S1247/S1248) (N150/N151)
                                                                                                           _PINPS
                                                                                                                                                                                                                                                                                                   SEQUENCE
                                                                                                                                                                                                                                                                                                                     MUTAGEN
                                                                                                                                                                                                                                                                                                                                   MUTAGEN
                                                                                                                                                                                                                                                                                                                                                MUTAGEN
                                                                                                                                                                                                                                                                                                                                                                MOD_RES
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                                                                                                                                                                                                                                                                                                                                                                               DISULFID
                                                                                                                                                                                                                                                                                                                                                                                              DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                     Postsynaptic neurotoxin; Neurotoxin; Toxin;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             "Structure-activity relationships in a peptidic alpha7 nicotinic acetylcholine receptor antagonist.",
J. Mol. Biol. 304:911-926(2000).
-i- FUNCTION: Alpha-conotoxins act on postsynaptic membranes the
                                                                                                                                                                                                                                                                                                                                                                                                           Acetylcholine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STRUCTURE BY NMR.

MEDLINB=99324017; PubMed=10395477;
Gehrmann J., Daly N.L., Alewcod P.F., Craik D.J.;
"Solution structure of alpha-conotoxin ImI by 1H
resonance.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Stevens R.C.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Rogers J.P., Luginbuhl P., Pemberton K., Harty P., Wemmer D.B.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PubMed=11124036;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MUTAGENESIS OF ASP-5; ARG-7 AND ARG-11, AND STRUCTURE BY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Lamthanh H., Jegou-Matheron C., Servent D., Menez A., Lancelin J.-M., "Minimal conformation of the alpha-conotoxin ImI for the alpha7 neuronal nicotinic acetylcholine receptor recognition: correlated CD, NMR and binding studies.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          THREE MUTANTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FEBS Lett. 454:293-298(1999).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PubMed=10431825;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STRUCTURE BY NMR.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FEBS Lett. 444:275-280(1999).
                                                                                                                                                                                                                                                   Local
                                                                                                                                                                                                     1 CCYD 4
                                                                                                                                                                         N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ; 1IM1; 15-JUN-99.
; 1IM1; 23-APR-99.
; 1CNL; 27-MAY-99.
; 1E74; 27-DEC-00.
; 1E75; 27-DEC-00.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  when injected centrally in mice and rats. It targets neuronal naches in mammals. It blocks homomeric alpha-7 nicotinic receptors with the highest apparent affinity and homomeric alpha-9 receptors with 8-fold lower affinity. It has no effect on receptors composed of alpha-2/beta-2, alpha-3/beta-2, alpha-4/beta-2, alpha-4/beta-4, or alpha-4/beta-4 subunit combinations.

SUBCELLULAR LOCATION: Secreted.
SUBCELLULAR LOCATION: Expressed by the venom duct.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TISSUE SPECIFICITY: Expressed by the venom duct.
SIMILARITY: BELONGS TO THE A-SUPERFAMILY OF CONOTOXINS. ALPHA-TYPE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  bind to the nicotinic acetylcholine receptors (nAChR) and thus inhibit them. It is highly active against the neuromuscular receptor in frog but not in mice. In contrast, it induces seizures
                                                                                                                                                                        CCSD 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FUNCTION: Alpha-conotoxins act on postsynaptic membranes,
                                                                                                                                                                                                                                                                                                                                                                                                                                              1G2G;
                                                                                                                                                                                                                                     Similarity 3; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Chem. 42:2364-2372(1999).
                                                                                                                                                                                                                                                                                                                                                                                                                                          00-VON-80
                                                                                                                                                                                                                                                                                                                                                                                                                                                           27-DEC-00
                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                              e receptor:
2 8
3 12
12
12
5 5
7 7
                                                                                                                                                                                                                                                                                                AA;
                                                                                                                                                                                                                                                                                                1357 MW;
                                                                                                                                                                                                                                                19.3%;
75.0%;
                                                                                                                                                                                                                                                                                                                                                                                                 inhibitor; Amidation; 3D-structure
                                                                                                                                                                                                                                 0,
                                                                                                                                                                                                                                             Score 22; DB 1;
Pred. No. 1.1e+03;
                                                                                                                                                                                                                                                                                      D->L:REDUCTION OF TOXICITY.
R->L:REDUCTION OF TOXICITY.
R->E:NO LOSS OF ACTIVITY.
9C29CEA545A4176A CRC64;
                                                                                                                                                                                                                                                                                                                                                           AMIDATION
                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ImI by 1H nuclear magnetic
                                                                                                                                                                                                                                                          Length 12;
                                                                                                                                                                                                                            Indels
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CXA3_CONAL STANDARD; PRT; 16 AA. P56641; P5664
                                                                                                                                                                                                                                                                                                             Olivera B.M., McIntosh J.M.;

"Alpha-conotoxin AuIB selectively blocks alpha3 beta4 nicotinic

"Alpha-conotoxin AuIB selectively blocks alpha3 beta4 nicotinic

acetylcholine receptors and nicotine-evoked norepinephrine release.";

J. Neurosci. 18:8571-8579(1998).

-i- FUNCTION: ALPHA-CONOTOXINS ACT ON POSTSYNAPTIC MEMBRANES, THEY
BIND TO THE NICOTINIC ACETYLCHOLINE RECEPTORS (NACHR) AND THUS

INHIBIT THEM. THIS PEPTIDE BLOCKS MARMALIAN NICOTINIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Plomion C., Costa P., Bahrman N., Frigerio J.M.;
"Genetic analysis of needle proteins in maritime pine. 1. Mapping dominant and codominant protein markers assayed on diploid tissue, a haploid-based genetic map.";
Silvae Genetica 46:161-165(1997).
                                                       DISUDFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MEDLINE=99003392; PubMed=9786965;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CONAL
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(Fragment).
(Fragment).

Pinus pinaster (Maritime pine).

Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;

Spermatophyta; Coniferopsida; Coniferales; Pinaceae; Pinus.

NCBI_TaxID-71647;
  MOD_RES
                           DISULFID
                                                                                                                                    HSSP; P50984; 1PEN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE, SYNTHESIS, AND MASS SPECTROMETRY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NCBI_TaxID=89437;
                                                                                Acetylcholine
                                                                                                           Postsynaptic
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Costa P., Pionneau C., Bauw G., Dubos C., Bahrman N., Kremer A.,
Frigerio J.-M., Plomion C.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NON_TER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NON_TER
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  proteins.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MEDLINE=99274088; PubMed=10344291;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TISSUE=Needle;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Separation and characterization of needle and xylem maritime pine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Local
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9 SATNDE 14
                                                                                                                                                                                                            SUBCELLULAR LOCATION: Secreted.
TISSUE SPECIFICITY: Expressed by the venom duct.
WASS SPECTROMETRY: MW=1667.6; METHOD=Electrospray
                                                                                                                                                                                      SIMILARITY: BELONGS
                                                                                                                                                                FAMILY
                                                                                                                                                                                                                                                                                          ACETYLCHOLINE RECEPTORS COMPOSED OF ALPHA-3/BETA-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PROTEIN IS: 5.5, ITS MW IS: 62 kDa.
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4; Conserv
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                                                                                                         neurotoxin; Neurotoxin;
2 receptor
2 8
3 16
16 16
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Cartier G.E., Jacobsen R.B., Yoshikami D.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          18.4%;
                                                                                inhibitor;
                                                                                                                                                                                   TO THE A-SUPERFAMILY OF CONOTOXINS. ALPHA-TYPE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2D-GEL THE DETERMINED PI OF
  AMIDATION
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                                                                                Amidation
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
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   Matches
                Query Match
Best Local :
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                                                                                                                                                                                                                                                                                                     MEDLINE=97444322; PubMed=9298951;
Hu S.H., Gehrmann J., Alewood P.F., Craik D.J., Martin J.L.;
"Crystal structure at 1.1-A posolution of alpha-conotoxin PnIB:
comparison with alpha-conotoxins PnIA and GI.";
Biochemistry 36:11323-11330(1997).
                                                          SEQUENCE
                                                                                                      DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                      desorption/ionization (MALDI) and atmospheric pressure MALDI mass spectrometry.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                "Identification of tyrosine sulfation in Conus pennaceus conotoxins alpha-PnIA and alpha-PnIB: further investigation of labile sulfo- ar phosphopeptides by electrospray, matrix-assisted laser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   acetylcholine receptors.";
Biochemistry 33:9523-9529(1994).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda; Neogastropoda; Conoidea; Conidae; Conus. NCBI_TaxID-37335;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Alpha-conotoxin PnIB.
Conus pennaceus (Feathered cone).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                P50985;
01-OCT-1996 (Rel. 34, Created)
01-OCT-1996 (Rel. 34, Last sequence up
15-JUN-2002 (Rel. 41, Last annotation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CONPE
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                                                                          MOD_RES
                                                                                                                    DISULFID
                                                                                                                               Acetylcholine receptor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MEDLINE=99242956; PubMed=10226369; Wolfender F., Fainzilber M., Wolfender J.L., Chu F., Ball H., Wolfender F., Fainzilber M.,
                                                                                       MOD_RES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Fainzilber M., Hasson A., Oren Spira M.E., Zlotkin E.;
                                                                                                                                                                                                                                                                                                                                                                            X-RAY CRYSTALLOGRAPHY (1.1 ANGSTROMS).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Baldwin M.A., Burlingame A.L.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SULFATION OF TYR-15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              "New mollusc-specific alpha-conotoxins block Aplysia neuronal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MEDLINE=94347719; PubMed=8068627;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CXAB_CONPE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SSUE=Venom;
                                                                                                                                                                                                                                                                                                                                                                                                         Mass Spectrom. 34:447-454(1999).
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                                                                                                                                                                                     SUBCELLULAR LOCATION: Secreted.
TISSUE SPECIFICITY: Expressed by the venom duct.
SIMILARITY: BELONGS TO THE A-SUPERFAMILY OF CONOTOXINS. ALPHA-TYPE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 CCYDGASVNNDETC 14
                                                                                                                                                                                                                               FUNCTION: ALPHA-CONOTOXINS ACT ON POSTSYNAPTIC MEMBRANES, THEY BIND TO THE NICOTINIC ACETYLCHOLINE RECEPTORS (NACHR) AND THUS INHIBIT THEM. IN CONTRAST TO OTHER ALPHA-CONOTOXINS, WHICH ARE SELECTIVE FOR VERTEBRATE SKELETAL MUSCLE NACHR, THE CONUS PENNACEUS ALPHA-CONOTOXINS BLOCK NACHR IN MOLLUSKS.
                                                                                                                                                              lake;
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 Similarity
3; Conserv
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                                                                                                                                                             20-MAY-98
                                                          16 AA;
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   Conservative
                                                                                                                                               neurotoxin; Neurotoxin; Toxin;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STANDARD;
                                                          1643 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1673 MW;
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                18.4%;
                                                                           16
15
15
8
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                                                                                                                                  inhibitor; Amidation; Sulfation;
   4; Mismatches
Score 21; DB 1; LC. Pred. No. 2.1e+03; Yamatches 7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 21;
Pred. No.
                                                       AMIDATION.
05310FF95ED86AF5 CRC64;
                                                                                      SULFATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1E310D3B8FDC7001 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        R., Burlingame A.L.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      update)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2.1e+03;
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                              Length 16;
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   Indels
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                                                                                                                                  3D-structure
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   Gaps
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1 CCYDGASVNNDETC 14

3 CSLPPCALSNPDYC 16

Search completed: May 1, 2003, 22:26:44 Job time: 27 secs

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Result
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Maximum Match 100%
Listing first 45 summaries
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Maximum DB seq length: 20
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Database :
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                                                                                                                                                                                                                                Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                     Score
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Gapop 10.0 , Gapext 0.5
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sp_plant:*
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sp_vertebrate:*
sp_unclassified:*
sp_rvirus:*
sp_rvirus:*
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Q9TT81
Q16188
P82201
Q30888
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Q9QW83
                                     Q9R4F3
O97668
                                                                                                                                                                                                                  SUMMARIES
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Q9qvj9 mus sp. mep
Q8spt4 macaca mula
Q78381 human immun
Q46665 macropus ro
Q9ucd0 homo sapien
Q9qw83 rattus norv
Q9ucc0 homo sapien
Q9tl81 hom taurus
Q16188 homo sapien
P82201 bombyx mori
Q30488 bradythizob
Q974f3 escherichia
Q97668 equus cabal
Q97511 brevtbacter
Q9udf5 homo sapien
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Q53502 lactobacill	TATTO	YIVICA	•	,	4	_	no		10				kobus la	redunca		connochaet	alcelaphus	o	hippo		Orvx dazel		Syncerus o	homo sant	rattus	rattus sp.	666 reovirus	P96421 neisseria g

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01-JUN-2002 (TrEMBLrel. 21, Created) 01-JUN-2002 (TrEMBLrel. 21, Last sequence update) 01-JUN-2002 (TrEMBLrel. 21, Last annotation update) Chloride channel 2 (Fragment).		LT 2	1 FNQVSITNDDT 11		Query Match 24.6%; Score 28; DB 11; Length 19; Best Local Similarity 36.4%; Pred. No. 7.4e+02; Matches 4; Conservative 4; Mismatches 3; Indels 0; Gaps 0;	E 19 AA; 2	NON-TER 19 19		A and -B. Cell surface endopeptida	Kounnas M.Z., Wolz R.L., Gorbea C.M., Rond J S.	MEDLINE=91373354; PubMed=1894622;	SEQUENCE.	_TaxID=10095;	a ;	ta; Metazoa; Chordata; Craniata; Vertehrata:	MUS Sp. Forest of (Fragilicit).	Meprin-B pentide B1 (Fragment)	01-JUN-2002 (TremBirel 13, Last sequence update)	(TrEMBLrel.		Q9QVJ9 PRELIMINARY; PRT; 19 AA	ULT 1

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RESULT 4
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Best Local :
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01-JUN-1998 (TrEMBLrel.
01-JUN-1998 (TrEMBLrel.
01-JUN-2002 (TrEMBLrel.
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Macropus rebustus robustus
                                                                G6PD.
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"Molecular Epidemiology of HIV Transmission in a Dental Practice.";
Science 256:1165-1171(1992).
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Ou C.-Y., Ciesielski C.A., Myers G., Bandea C.I., Luo C.C.,
Korber B.T.M., Millins J.I., Schochetman G., Berkelman R.L.,
Economou A.N., Witte J.J., Furman L.J., Satten G.A., Curran J.W.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             078381;
01-NOV-1996 (TrEMBLrel. 01, Created)
01-NOV-1996 (TrEMBLrel. 01, Last sequence update)
01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
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                                                                                                           Glucose-6-phosphate dehydrogenase (Fragment).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1; Mismatches
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Pred. No. 1.3e+0
5; Mismatches
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Best Local
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                                                                                     O9OW83;
01-MAY-2000 (TrEMBLrel. 13, Created)
01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
01-JUN-2002 (TrEMBLrel. 21, Last annotation update)
PHOSPHOPHORYN-PEPTIDE fragment 12-44 (Fragment).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Q9UCDO;
01-MAY-2000 (TrEMBLrel. 13, Created)
01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
01-JUN-2000 (TrEMBLrel. 14, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              C215 antigen (Fragment). Homo sapiens (Human).
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SEQUENCE FROM N.A. MEDLINE=91291127; PubMed=2064607;
                                                    Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rat
                                                                                  Rattus norvegicus (Rat).
                                                                                                                                                                 Q9QW83
                                                                                                                                                                                                                                                                                                                                                 SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                          colon adenocarcinoma cell-surface glycoprotein recognized mouse monoclonal antibody.";
                                                                                                                                                                                                                                                                                                                                                                                                                 Bjork P., Jonsson U., Svedberg H., Larsson K., Lind P., Dillner J., Hedlund G., Dohlsten M., Kalland T.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Q9UCD0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   wallaroo (Macropus robustus) by polymerase chain reaction."; Mamm. Genome 8:146-147(1997).
EMBL; U53775; AAA48790.1; -.
Interpro; IPR001282; GGPD.
Pfam; PF02781; GGPD_C; 1.
                                         NCBI_TaxID=10116;
                                                                                                                                                                                                                                                                                                                                                                                                       "Isolation, partial characterization, and molecular cloning of a human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                             MEDLINE=94043256; PubMed=7693697;
                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Metatheria; Diprotodontia; Macropodidae; Macropus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Loebel D.A., Johnston P.G.;
"Analysis of the intron-exon structure of the G6PD gene of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NCBI_TaxID=35580;
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nes 5; Conserv
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                                                                                                                                                                 PRELIMINARY;
                                                                                                                                                                                                                                                                                            Conservative
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AA; 2042 MW; 54135D12119705E6 CRC64;
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33.3%;
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Pred. No.
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Matches 4; Conser
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Best Local
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OSUCCO;
O1-MAY-2000 (TrEMBLrel. 13, Created)
O1-MAY-2000 (TrEMBLrel. 13, Last sequence update)
O1-JUN-2000 (TREMBLrel. 14, Last annotation update)
Insulin-like growth factor receptor alpha subunit (Fragment).
Homo sapiens (Human)
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NON_TER
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    01-MAY-2000 (TrEMBLrel. 13, Created)
01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
Wilm's tumor protein 1 (Fragment).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   I/insulin hybrid receptors by protein microsequencing purification.";
Biochemistry 32:13531-13536(1993).
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Kasuya J., Paz I.B., Maddux B.A., Goldfine I.D., Hefta S.A.,
Fujita-Yamaguchi Y.;
"Characterization of human placental insulin-like growth factor-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE
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                                                                       EMBL; AF201738; AAF19824.1;
                                                                                                      Mamm. Genome 11:1079-1086(2000).
                                                                                                                                               method.
                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Bos taurus (Bovine).
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Mammalia; Eutheria; Primates; Catarrhini; Hominidae;
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                                                                                                                                                                                                                                                                                                                                                                NCBI_TaxID-9913;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE
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                                                                                                                                                                              Estimate of nucleotide diversity
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           22.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          21.98;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ω,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 25; DB 4; Pred. No. 1.8e+03; Standardnes 5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 26;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     744603FE729FDE0C CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    98BC151D6D81784B CRC64;
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ity in
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 19;
                                                                                                                                                                              pool-and-sequence
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                                                                                                                                                                                                                                                                                                                                                                                                                                        Bovoidea;
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RESULT
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Best Local S
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Query Match
Best Local Similarity
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P82201;
                                                                                                                                                                                                                                                                                                                                                                                                                              EMBL; ST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Q16188;
01-NOV-1996 (TrEMBLrel. 01, Created)
01-NOV-1996 (TrEMBLrel. 01, Last sequence update)
01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
                                                                                                                                                                                                   Unknown protein from 2D-page Bombyx mori (Silk moth).
                                                                                                                                                                                                                      01-OCT-2001 (TrEMBLrel. 18, Created)
01-OCT-2001 (TrEMBLrel. 18, Last sequence update)
01-OCT-2001 (TrEMBLrel. 18, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Shovlin C.L., Simmonds H.A., Fairbanks L.D., Hughes J.M., Lechler R.I., Webster A.D., Sun Soutar A.K.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Homo sapiens (Human).
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Primates;
                                SEQUENCE
                                            NON_TER
                                                                            silkworm.";
                                                                                                   Zhong B.X.;
                                                                                                             STRAIN-XINHANG X KEMING; MEDLINE-21177481; PubMed.
                                                                                                                                   SEQUENCE
                                                                                                                                                      Bombycoidea; Bom
NCBI_TaxID=7091;
                                                                                                                                                                            Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta; Pterygota; Neoptera; Endopterygota; Lepidoptera; Glossata; Ditrysia;
                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                        J. Immunol. 153:2331-2339(1994).
EMBL; S72469; AAD14102.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                           "Adult onset immunodeficiency caused by deficiency.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A. MEDLINE=94327968; PubMed=8051429;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Adenosine deaminase protein ADENOSINE DEAMINASE.
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                                                                                       "Protein database for several tissues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NCBI_TaxID=9606;
                                                                 Chuan Hsueh Pao 28:217-224(2001)
                                                      !- SIMILARITY: TO THE N-TERMINAL OF TROPOMYOSINS
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                                                                                                                                                                                                                                                                                                                              12 SCEVRCSR 19
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nes 3; Conserv
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                                                                                                                                                                                                                                                                      PRELIMINARY;
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                                          20
                                                                                                                                                                  Bombycidae;
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                                                                                                           KEMING; TISSUE-BODY WALL,
PubMed=11280994;
                                                                                                                                                                                                                                                                                                                                                                                                                    2175 MW;
                                 2215 MW;
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21.1%;
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                                                                                                                                                                   Bombyx.
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          Score
                                A3C1EFD3F1350767 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                            Score 24; DB 4;
                                                                                                                                                                                                                                                                                                                                                                                                                    4EABA6143F739B4C CRC64;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Craniata; Vertebrata; Euteleostomi; Catarrhini; Hominidae; Homo.
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24;
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3.7e+03;
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           DB 5;
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X.M., Webb J.C.,
                                                                                                                                                                                                                                                                                                                                                                         2
           Length 20;
                                                                                                                        FAT BODY
                                                                                                                                                                                                                                                                                                                                                                                            Length 20;
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030888
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Best Local
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Q1-MAY-2000 (TrEMBLrel. 13, Created)
Q1-MAY-2000 (TrEMBLrel. 13, Last sequence update)
Q1-MAY-2000 (TrEMBLrel. 13, Last annotation update)
Q1-MAY-2000 (TrEMBLrel. 13, Last annotation update)
Q0 kDa fimbrial adhesin subunit (Fragment).
                                                                                                                                                                                                                                                                                                                                                                                   Bertin Y., Girardeau J.P., Darfeuille-Michaud A., Contrepois M.; "Characterization of 20K fimbria, a new adhesin of septicemic and diarrhea-associated Escherichia coli strains, that belongs to a family of adhesins with N-acetyl-D-glucosamine recognition."; Infect. Immun. 64:332-342(1996).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MEDLINE=96110952; PubMed=8557360;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE
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MEDLING-20020861; PubMed=10553291;
Sterner J.P., Parker M.A.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       030888;
01-JAN-1998 (TrEMBLrel. 05, Created)
01-JAN-1998 (TrEMBLrel. 05, Last sequence update)
01-DEC-2001 (TrEMBLrel. 19, Last annotation updat
                              13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE
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Bradyrhizobium group; Bradyrhizobium gro
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                                                                                                                                                                                   YDGASVNNDETCEQ 16
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                                                                                                                      YDGTINFNGKVVDQ 14
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                                                                                                                                                                                                                                                      Similarity 5; Conserv
                                                                                                                                                                                                                                                      Conservative
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                                                                                                                                                                                                                                                                              20.2%;
35.7%;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ria; alpha subdivision;
Bradyrhizobium.
                                                                                                                                                                                                                                                                                                                                                                                MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gamma subdivision; Enterobacteriaceae;
                                                                                                                                                                                                                                            Pred. No. 4.8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4;
                                                                                                                                                                                                                                                                                                     Score 23;
                                                                                                                                                                                                                                                                                                                                                                      79AF96A13476DF81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      C8C595DCD14D7A5F
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Pred. No. 4.86
; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 23;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           No. 4.8e+03;
                                                                                                                                                                                                                                  4.8e+03;
7;
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                                                                                                                                                                                                                                                                                                                                                                         CRC64;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CRC64;
                                                                                                                                                                                                                                                                                                     Length 18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
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RESULT
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Best Local
                                                                                  Q9UDF5 PRELIMINARY; PRT; 20 AA. Q9UDF5; 201-MAY-2000 (TrEMBLrel. 13, Created) 01-MAY-2000 (TrEMBLrel. 13, Last sequence update) 01-MAR-2001 (TrEMBLrel. 16, Last annotation update) 01-MAR-2001 (TrEMBLrel. 16 ast annotation update) 01-MAR-2001 (TrEMBLREL 16 ast annotation update) 01-
Homo sapiens (Human).
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Primates;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  J. Basic Microbiol. 32:13-19
SEQUENCE 19 AA; 1923 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MEDLINE=92407758; PubMed=1527703
Duran R., Chion C.K., Bigey F.,
"The N-terminal amino acid seque
nitrile hydratase.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Q9R511 PRELIMINARY; PRT; 19 AA.
Q9R511;
Q1-MAY-2000 (TrEMBLrel. 13, Created)
Q1-MAY-2000 (TrEMBLrel. 13, Last sequence update)
Q1-DEC-2001 (TrEMBLrel. 19, Last annotation update)
Nitrile hydratase alpha subunit (Fragment).
Brevibacterium.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Actinomycetales; Micrococcineae;
NCBI_TaxID=1696;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Bacteria; Firmicutes; Actinobacteria; Actinobacteridae; Actinomycetales; Micrococcineae; Brevibacteriaceae.
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097668;
01-MAY-1999
01-MAY-1999
01-JUN-2001
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Brandon R.B., Giffard J.M., Bell T.K.;

"Isolation of Equine Lactoferrin Gene.";

Submitted (OCT-1998) to the EMBL/GenBank/DDBJ databases.

EMBL; AF102025; AAC77463.1; -.

HSSP; O77698; ICE2.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Pfam; PF00405; transferrin; NON_TER 1 1
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NCBI_TaxID=9796;
[1]
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Mammalia; Eutheria; Perissodactyla; Equidae; Equus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Lactoferrin (Fragment).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     18 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              σ
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PubMed=1527703;
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Pred. No.
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   Catarrhini;
                           Craniata; Vertebrata; Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               84726D1A1282FB63 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 23; DB 6;
Pred. No. 4.8e+03;
0; Mismatches 2
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Hominidae;
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OX NCBI_TaxID=9606;
RN [1]
RP SEQUENCE.
RY MEDLINE=95294018; PubMed=7539799;
RX MEDLINE=95294018; PubMed=7539799;
RA Duke-Cohan J.S., Morimoto C., Rocker J.A., Schlossman S.F.;
RT J. A novel form of dipeptidylpeptidase IV found in human serum.
RT Isolation, characterization, and comparison with T lymphocyte membrane
RT J. Biol. Chem. 270:14107-14114(1995).
SQ SEQUENCE 20 AA; 2274 MW; 764B669537DB8ABO CRC64;
Query Match
Best Local Similarity 40.0%; Pred. No. 5.4e+03;
Matches 4; Conservative 1; Mismatches 5; Indels 0; Gaps
Oy 2 CYDGASVNND 11
Db 7 CYSCTANTND 16
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Result
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Listing first 45 summaries
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                     Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                             Score
              100.0
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C-terminal truncat
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Compositions for treating blood-borne and toxin mediated diseases and treatment of sepsis in humans and other animals comprises anti-C5a	WPI; 2001-226665/23. N-PSDB; AAF75793.	Ward PA, Huber-Lang M, Sarma V;	(UNMI ) UNIV MICHIGAN.	31-AUG-1999; 99US-0387671.	31-AUG-2000; 2000WO-US24219.	08-MAR-2001.	WO200115731-A1.	Homo sapiens.	Human; C5a; complement; antibody; bacterial infection; sinusitis; meningitis; respiratory; gastrointestinal; urinary tract infection; wound; anaphylatoxin; sepsis.	Human C5a peptide fragment #2.	16-MAY-2001 (first entry)	AAB74055;	RESULT 1 AAB74055 XX

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RESULT 2
AAB74111
ID AAB7
XX AAB7
XX AAB7
XX AAB7
XX 16-M
XX C5a;
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                                                                                                                                                                           sequence. The C5a-antibody can be used in a therapeutic composition, which is useful for treating a subject suffering from bacterial infection, e.g. sinusitis, meningitis, respiratory, gastrointestinal or urinary tract infections or infections in wounds. In addition, the C5a antibody can be used for treating sepsis. C5a is also known as
                                                                                          Sequence
                                                                                                                                                       anaphylatoxin
                                                                                                                                                                                                                                                                                                                                      The present sequence is a C-terminal truncated C5a peptide fragment. present invention relates to an antibody specific for the present
                                                                                                                                                                                                                                                                                                                                                                                                                                       Disclosure; Page 30; 84pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 antibodies generated against C-terminal truncated C5a peptides
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Unidentified.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Compositions for treating blood-borne and toxin mediated diseases and treatment of sepsis in humans and other animals comprises anti-C5a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 31-AUG-1999;
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   Score 111; DB 22;
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RESULT 3
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AAB74110
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AC AAB7
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XX C5a;
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                     C-terminal truncated C5a peptide #50.
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                                                                                                                                                                                                  AAB74112 standard; Peptide; 20 AA.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Compositions for treating blood-borne and toxin mediated diseases and treatment of sepsis in humans and other animals comprises anti-C5a antibodies generated against C-terminal truncated C5a peptides \, -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 anaphylatoxin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           The present sequence is a C-terminal truncated C5a peptide fragment. The present invention relates to an antibody specific for the present
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            C5a; complement; antibody; bacterial infection; sinusitis; meningitis; respiratory; gastrointestinal; urinary tract infection;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    C-terminal truncated C5a peptide #48.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              16-MAY-2001
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAB74110 standard; Peptide; 20 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (UNMI ) UNIV MICHIGAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Local Similarity
                                                                                                                                                                                                                                                                                                                                                                        1 CCYDGASVNNDETCEQRAAR 20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                \vdash
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                                                                                                                                                                                                                                                                                                                                             CCYDGASVNNDESCEQRAAR 20
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                                                                                                                                                                                                                                                                                                                                                                                                                                                          19;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Huber-Lang M,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             20 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (first entry)
                                                                              (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                99US-0387671
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        96.5%;
95.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sarma V;
                                                                                                                                                                                                                                                                                                                                                                                                                                                             <u>ب</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 110; DB 22;
Pred. No. 1.9e-10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 20;
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
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Best Local S
Matches 19
  Ward PA,
                          (UNMI ) UNIV MICHIGAN.
                                                  31-AUG-1999;
                                                                        31-AUG-2000; 2000WO-US24219.
                                                                                                     08-MAR-2001.
                                                                                                                            WO200115731-A1
                                                                                                                                                      Unidentified.
                                                                                                                                                                              wound; anaphylatoxin;
                                                                                                                                                                                      C5a; complement; antibody; bacterial infection; sinusitis; meningitis; respiratory; gastrointestinal; urinary tract i
                                                                                                                                                                                                                           C-terminal truncated C5a peptide #51.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        The present sequence is a C-terminal truncated C5a peptide fragment. The present invention relates to an antibody specific for the present sequence. The C5a-antibody can be used in a therapeutic composition, which is useful for treating a subject suffering from bacterial infection, e.g. sinusitis, meningitis, respiratory, gastrointestinal or urinary tract infections or infections in wounds. In addition, the C5a antibody can be used for treating sepsis. C5a is also known as
                                                                                                                                                                                                                                                         16-MAY-2001
                                                                                                                                                                                                                                                                                  AAB74113;
                                                                                                                                                                                                                                                                                                        AAB74113 standard; Peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Compositions for treating blood-borne and toxin mediated diseases and treatment of sepsis in humans and other animals comprises anti-C5a antibodies generated against C-terminal truncated C5a peptides
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     anaphylatoxin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Disclosure; Page 30; 84pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WPI; 2001-226665/23.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        31-AUG-1999;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Unidentified.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           08-MAR-2001.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          C5a; complement; antibody; bacterial infection; sinusitis;
meningitis; respiratory; gastrointestinal; urinary tract infection;
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                                                                                                                                                                                                                                                                                                                                                                                    1 CCYDGASVNNDETCEQRAAR 20
                                                                                                                                                                                                                                                                                                                                                                       CCYDGVSVNNDETCEQRAAR 20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   anaphylatoxin; sepsis.
                                                                                                                                                                                                                                                                                                                                                                                                                                       Similarity
Huber-Lang M,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Huber-Lang M,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            20 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                      (first entry)
                                                 99US-0387671
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         99US-0387671.
                                                                                                                                                                                                                                                                                                                                                                                                                                     96.5%;
                                                                                                                                                                             sepsis
 Sarma V;
                                                                                                                                                                                     gastrointestinal; urinary tract infection;
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                                                                                                                                                                                                                                                                                                         20 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                         0;
                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 110; DB 22;
Pred. No. 1.9e-10;
                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 20;
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RESULT 6
AAB74114
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Best Local
     sequence. The C5a-antibody can be used in a therapeutic composition, which is useful for treating a subject suffering from bacterial infection, e.g. sinusitis, meningitis, respiratory, gastrointestinal or urinary tract infections or infections in wounds. In addition, the C5a antibody can be used for treating sepsis. C5a is also known as
                                                                                                                                                              Compositions for treating blood-borne and toxin mediated diseases and treatment of sepsis in humans and other animals comprises anti-C5a antibodies generated against C-terminal truncated C5a peptides
                                                                                The present sequence is a C-terminal truncated C5a peptide fragment. The present invention relates to an antibody specific for the present
 anaphylatoxin
                                                                                                                                     Disclosure; Page 30; 84pp; English.
                                                                                                                                                                                                                                    WPI; 2001-226665/23.
                                                                                                                                                                                                                                                                    Ward PA,
                                                                                                                                                                                                                                                                                                                                    31-AUG-1999;
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                                                                                                                                                                                                                                                                                                                                                                31-AUG-2000; 2000WO-US24219.
                                                                                                                                                                                                                                                                                                                                                                                                   08-MAR-2001.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     C5a; complement; antibody; bacterial infection; sinusitis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        C-terminal truncated C5a peptide #52.
                                                                                                                                                                                                                                                                                                                                                                                                                                 WO200115731-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Unidentified
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            meningitis; respiratory;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAB74114 standard; Peptide; 20 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        The present sequence is a C-terminal truncated C5a peptide fragment. The present invention relates to an antibody specific for the present sequence. The C5a-antibody can be used in a therapeutic composition, which is useful for treating a subject suffering from bacterial infection, e.g. sinusitis, meningitis, respiratory, gastrointestinal or urinary tract infections or infections in wounds. In addition, the C5a antibody can be used for treating sepsis. C5a is also known as
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          wound; anaphylatoxin; sepsis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       16-MAY-2001 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAB74114;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Disclosure; Page 30; 84pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Compositions for treating blood-borne and toxin mediated diseases and treatment of sepsis in humans and other animals comprises anti-C5a antibodies generated against C-terminal truncated C5a peptides -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 anaphylatoxin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WPI; 2001-226665/23.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 CCYDGASANNDETCEORAAR 20
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                                                                                                                                                                                                                                                                 Huber-Lang M,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 20 AA;
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                                                                                                                                                                                                                                                                                                                                    9908-0387671
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               96.5%;
95.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gastrointestinal; urinary tract infection;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 110; DB 22;
Pred. No. 1.9e-10;
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AAB74097
ID AAB7
XX
AC AAB7
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                                                                                                                                             Matches
                                                                                                                                                                  Query Match
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Best Local :
                    AAB74097 standard; Peptide; 19
  AAB74097;
                                                                                                                                                                                                                            The present sequence is a C-terminal truncated C5a peptide fragment. The present invention relates to an antibody specific for the present sequence. The C5a-antibody can be used in a therapeutic composition, which is useful for treating a subject suffering from bacterial infection, e.g. sinusitis, meningitis, respiratory, gastrointestinal or urinary tract infections or infections in wounds. In addition, the C5a antibody can be used for treating sepsis. C5a is also known as
                                                                                                                                                                                             Sequence
                                                                                                                                                                                                                                                                                                                                                       Compositions for treating blood-borne and toxin mediated diseases and treatment of sepsis in humans and other animals comprises anti-C5a antibodies generated against C-terminal truncated C5a peptides .
                                                                                                                                                                                                                       anaphylatoxin.
                                                                                                                                                                                                                                                                                                                                  Disclosure; Page 30; 84pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           31-AUG-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   31-AUG-2000; 2000WO-US24219.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Unidentified.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                C5a; complement; antibody; bacterial infection; sinusitis;
meningitis; respiratory; gastrointestinal; urinary tract infection;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     C-terminal truncated C5a peptide #54
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                (UNMI ) UNIV MICHIGAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     wound; anaphylatoxin; sepsis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               16-MAY-2001 (first entry)
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                                                                                                                                                        Local Similarity
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                                                                                                    1 CCYDGASVNNDETCEQRAAR 20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 CCYDGASVNNDETCEORVAR 20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 CCYDGASVNNDETCEQRAAR 20
                                                                                          CCYDGASVNNDETCEQRAVR 20
                                                                                                                                           19;
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                                                                                                                                                                                                                                                                                                                                                                                                                                       Huber-Lang M,
                                                                                                                                                                                             20 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    20 AA;
                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           99us-0387671.
                                                                                                                                                     96.5%;
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95.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                       Sarma V;
                                                                                                                                         0;
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                                                                                                                                                     Score 110; DB 22;
Pred. No. 1.9e-10;
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Pred. No. 1.9e-10;
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                                                                                                                                          Mismatches
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                                                                                                                                                                 Length 20;
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                                                                                                                                         Gaps
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RESULT 9
AAB74120
ID AAB7
XX AAB7
XX AAB7
XX I 16-M
DT 16-M
XX Huma
XX Huma
XX Menaid
KW Menaid
KW Wour
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                       The present sequence is a C-terminal truncated C5a peptide fragment. The present invention relates to an antibody specific for the present sequence. The C5a-antibody can be used in a therapeutic composition, which is useful for treating a subject suffering from bacterial infection, e.g. sinusitis, meningitis, respiratory, gastrointestinal or urinary tract infections or infections in wounds. In addition, the C5a antibody can be used for treating sepsis. C5a is also known as
                                                                                                                                                                                                   16-MAY-2001 (first entry)
                                                                                                                                                                                                                                                        AAB74120 standard; Peptide; 20 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                             anaphylatoxin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Disclosure; Page 30; 84pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Compositions for treating blood-borne and toxin mediated diseases and treatment of sepsis in humans and other animals comprises anti-C5a antibodies generated against C-terminal truncated C5a peptides
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WPI; 2001-226665/23.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ward PA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               C5a; complement; antibody; bacterial infection; sinusitis;
meningitis; respiratory; gastrointestinal; urinary tract infection;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 31-AUG-1999;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Unidentified.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       C-terminal truncated C5a peptide #35
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    wound; anaphylatoxin; sepsis.
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                                                                                                                                                                                                                                                                                                                                                                               Local Similarity nes 19; Conserv
                                                                                                                                                                                                                                                                                                                                                    1 CCYDGASVNNDETCEQRAA 19
                                                                                                                                                                                                                                                                                                                          CCYDGASVNNDETCEQRAA 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Huber-Lang M,
                                                                                                                                                                                                                                                                                                                                                                                                                                     19 AA;
                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                99US-0387671.
                                                                                                                                                                                                                                                                                                                                                                                       95.6%;
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                                                                                                                                                                                                                                                                                                                                                                               0;
                                                                                                                                                                                                                                                                                                                                                                                         Score 109; DB 22;
Pred. No. 2.6e-10;
                                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                      Length 19;
                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                             0;
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Human; C5a; complement; antibody; bacterial infection; sinusitis; meningitis; respiratory; gastrointestinal; urinary tract infectio wound; anaphylatoxin; sepsis.

Human C5a peptide fragment #7.

31-AUG-2000; 2000WO-US24219.

08-MAR-2001. WO200115731-A1

sapiens.

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RESULT 11
AAB74107
ID
AAAF74107
ID
AAAF741
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Best Local
                           The present sequence is a C-terminal truncated C5a peptide fragment. The present invention relates to an antibody specific for the present
                                                                                                                                                                                                                                                                Compositions for treating blood-borne and toxin mediated diseases treatment of sepsis in humans and other animals comprises anti-C5a antibodies generated against C-terminal truncated C5a peptides
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        The present sequence is a peptide fragment of human complement component C5a (the full-length sequence is given in AAB74119). The present invention relates to an antibody specific for the present sequence. The C5a-antibody can be used in a therapeutic composition, which is useful for treating a subject suffering from bacterial infection, e.g. sinusitis, meningitis, respiratory, gastrointestinal or urinary tract infections or infections in wounds. In addition, the C5a antibody can be used for treating sepsis. C5a is also known as anaphylatoxin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                     WPI; 2001-226665/23.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ward PA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (UNMI ) UNIV MICHIGAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          31-AUG-1999;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Unidentified.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       meningitis; respiratory; gastrointestinal; urinary tract infection;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      C5a; complement; antibody; bacterial infection; sinusitis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              C-terminal truncated C5a peptide #45.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Compositions for treating blood-borne and toxin mediated diseases and treatment of sepsis in humans and other animals comprises anti-C5a antibodies generated against C-terminal truncated C5a peptides -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Disclosure; Fig 15; 84pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           31-AUG-1999;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     10
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ocal Similarity
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               19;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       anaphylatoxin; sepsis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Huber-Lang
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Huber-Lang M,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           20 AA;
                                                                                                                                                                                Page 30; 84pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9905-0387671.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               95.6%;
95.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sarma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sarma V;
                                                                                                                                                                                English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
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Pred. No. 2.7e-10;
D; Mismatches 1,
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sequence.

The C5a-antibody can be used in a therapeutic

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CCYDGASVNNQETCEQRAAR

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    Matches
                             Query Match
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                                                                                           The present sequence is a C-terminal truncated C5a peptide fragment. present invention relates to an antibody specific for the present sequence. The C5a-antibody can be used in a therapeutic composition, which is useful for treating a subject suffering from bacterial infection, e.g. sinusitis, meningitis, respiratory, gastrointestinal urinary tract infections or infections in wounds. In addition, the C5 antibody can be used for treating sepsis. C5a is also known as
                                                           Sequence
                                                                                     anaphylatoxin.
                                                                                                                                                                                                             Disclosure; Page 30; 84pp; English.
                                                                                                                                                                                                                                      Compositions for treating blood-borne and toxin mediated diseases and treatment of sepsis in humans and other animals comprises anti-C5a antibodies generated against C-terminal truncated C5a peptides -
                                                                                                                                                                                                                                                                                                                            Ward PA, Huber-Lang M,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     C-terminal truncated C5a peptide #46.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                which is useful for treating a subject suffering from bacterial infection, e.g. sinusitis, meningitis, respiratory, gastrointestinal or urinary tract infections or infections in wounds. In addition, the C5a antibody can be used for treating sepsis. C5a is also known as
                                                                                                                                                                                                                                                                                                                                                                                      31-AUG-1999;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Unidentified.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            meningitis; respiratory; gastrointestinal; urinary tract infection;
wound; anaphylatoxin; sepsis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAB74108 standard; Peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence
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                                                                                                                                                                                                                                                                                                   2001-226665/23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         complement; antibody; bacterial infection; sinusitis;
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  l Similarity
19; Conserv
                                                           20 AA;
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  Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (first entry)
                                                                                                                                                                                                                                                                                                                                                                                      99US-0387671
              94.78;
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  0;
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             Score 108; DB 22;
Pred. No. 3.9e-10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 108; DB 22;
Pred. No. 3.9e-10;
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                            Length 20;
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Gaps
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AAB74115
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                                                                                                                                                                                                                                                                                                                        Query Match
W0200115731-A1.
                        Unidentified.
                                                     meningitis; respiratory; gastrointestinal; urinary tract infection;
                                                                  C5a; complement; antibody; bacterial infection; sinusitis;
                                                                                               C-terminal truncated C5a peptide #36
                                                wound; anaphylatoxin; sepsis.
                                                                                                                                                      AAB74098;
                                                                                                                                                                           AAB74098 standard; Peptide; 18 AA.
                                                                                                                            16-MAY-2001
                                                                                                                                                                                                                                                                                                                                                                          The present sequence is a C-terminal truncated C5a peptide fragment. The present invention relates to an antibody specific for the present sequence. The C5a-antibody can be used in a therapeutic composition, which is useful for treating a subject suffering from bacterial infection, e.g. sinusitis, meningitis, respiratory, gastrointestinal or urinary tract infections or infections in wounds. In addition, the C5a antibody can be used for treating sepsis. C5a is also known as
                                                                                                                                                                                                                                                                                                                                                Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Disclosure; Page 30; 84pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Compositions for treating blood-borne and toxin mediated diseases and treatment of sepsis in humans and other animals comprises anti-C5a antibodies generated against C-terminal truncated C5a peptides
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             08-MAR-2001.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Unidentified.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                meningitis; respiratory; gastrointestinal; urinary tract infection; wound; anaphylatoxin; sepsis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        C5a; complement; antibody; bacterial infection; sinusitis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      C-terminal truncated C5a peptide #53
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAB74115 standard; Peptide; 20 AA.
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                                                                                                                                                                                                                                                                                              Local Similarity
wes 18; Conserv
                                                                                                                                                                                                                                                                  1 CCYDGASVNNDETCEQRAAR 20
                                                                                                                                                                                                                                          CCYDGASVNNDETCEQRVVR 20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Huber-Lang M,
                                                                                                                                                                                                                                                                                                                                                20 AA;
                                                                                                                         (first entry)
                                                                                                                                                                                                                                                                                             Conservative
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                                                                                                                                                                                                                                                                                                     Score 106; DB 22;
Pred. No. 8.1e-10;
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Best Local 9
    Compositions for treating blood-borne and toxin mediated diseases and treatment of sepsis in humans and other animals comprises anti-C5a antibodies generated against C-terminal truncated C5a peptides
                                                                WPI; 2001-226665/23.
                                                                                                                    (UNMI ) UNIV MICHIGAN
                                                                                                                                             31-AUG-1999;
                                                                                                                                                                      31-AUG-2000; 2000WO-US24219.
                                                                                                                                                                                                                                                                            C5a; complement; antibody; bacterial infection; sinusitis; meningitis; respiratory; gastrointestinal; urinary tract infection; wound; anaphylatoxin; sepsis.
                                                                                                                                                                                                  08-MAR-2001.
                                                                                                                                                                                                                                                      Unidentified.
                                                                                                                                                                                                                             WO200115731-A1
                                                                                                                                                                                                                                                                                                                                  C-terminal truncated C5a peptide #40
                                                                                                                                                                                                                                                                                                                                                               16-MAY-2001
                                                                                                                                                                                                                                                                                                                                                                                                               AAB74102 standard; Peptide; 19 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        The present sequence is a C-terminal truncated C5a peptide fragment. The present invention relates to an antibody specific for the present sequence. The C5a-antibody can be used in a therapeutic composition, which is useful for treating a subject suffering from bacterial infection, e.g. sinusitis, meningitis, respiratory, gastrointestinal or urinary tract infections or infections in wounds. In addition, the C5a antibody can be used for treating sepsis. C5a is also known as
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Compositions for treating blood-borne and toxin mediated diseases and treatment of sepsis in humans and other animals comprises anti-C5a antibodies generated against C-terminal truncated C5a peptides
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                                                                                        Huber-Lang M,
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100.0%; Pred. No. 1e-09;
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                                                                                                                                                                                            The present sequence is a C-terminal truncated C5a peptide fragment. The present invention relates to an antibody specific for the present sequence. The C5a-antibody can be used in a therapeutic composition, which is useful for treating a subject suffering from bacterial infection, e.g. sinusitis, meningitis, respiratory, gastrointestinal or urinary tract infections or infections in wounds. In addition, the C5a antibody can be used for treating sepsis. C5a is also known as
                                                                                                                                       Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Disclosure; Page 30; 84pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Compositions for treating blood-borne and toxin mediated diseases and treatment of sepsis in humans and other animals comprises anti-CSa antibodies generated against C-terminal truncated CSa peptides
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WPI; 2001-226665/23.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 C5a; complement; antibody; bacterial infection; sinusitis; meningitis; respiratory; gastrointestinal; urinary tract infection;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        wound; anaphylatoxin; sepsis.
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ilarity 100.0%; Pred. No. 1.1e-09;
Conservative 0; Mismatches 0;
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                                     89.5%; Score 102; DB 22; 90.0%; Pred. No. 3.4e-09;
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Search completed: May 1, 2003, 22:26:11 Job time : 75 secs

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Listing first 45 summaries
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US-09-878-603-68

US-09-878-603-70

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US-09-878-603-71

US-09-878-603-73

US-09-878-603-54

US-09-878-603-54

US-09-878-603-54

US-09-878-603-55

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; GENERAL INFORMATION:
; APPLICANT: Ward, Peter A.
; APPLICANT: Huber-Lang, M

APPLICANT:

Huber-Lang, Markus Sarma, Vidya

APPLICANT: Czermak, Boris
TITLE OF INVENTION: Compositions and Methods for the Treatment of Sepsis
FILE REFERENCE: UM-03783

PRIOR APPLICATION NUMBER: 2001-06-11/8/
PRIOR APPLICATION NUMBER: 09/387,671
PRIOR FILLING DATE: 1999-08-31
NUMBER OF SEQ ID NOS: 74
SOFTWARE: Patentin Ver. 2.0
SEQ ID NO 5

CURRENT APPLICATION NUMBER: US/09/878,603 CURRENT FILING DATE: 2001-06-11

US-09-878-603-5

RESULT 1

// Sequence 5, Application US/09878603
// Patent No. US20020165138A1

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	22.8							23.7	24.1			24.6		•	24.6	•	•	25.4			28.1				72.8	78.1
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## ALIGNMENTS

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; GENERAL INFORMATION:
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                                                                                              Sequence 68, Application US/09878603 Patent No. US20020165138A1
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              APPLICANT: Ward, Peter A.
APPLICANT: Huber-Lang, Markus
APPLICANT: Sarma, Vidya
APPLICANT: Czermak, Boris
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      TITLE
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TYPE: PRT
ORGANISM: Homo sapiens
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INVENTION: Compositions and Methods for the Treatment of Sepsis
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US-09-878-603-69
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                                                                                                                                                                                              Sequence 69, Application US/09878603 Patent No. US20020165138A1
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Best Local Similarity
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CURRENT APPLICATION NUMBER: US/09/878,603
CURRENT FILING DATE: 2001-06-11
PRIOR APPLICATION NUMBER: 09/387,671
PRIOR FILING DATE: 1999-08-31
                                                                                                                        APPLICANT: Ward, Peter A.
APPLICANT: Huber-Lang, Markus
APPLICANT: Sarma, Vidya
                                                              APPLICANT: Czermak, Boris
TITLE OF INVENTION: Compositions and Methods for the Treatment of Sepsis
FILE REFERENCE: UM-03783
                                                                                                              APPLICANT:
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SEQ ID NO 68
LENGTH: 20
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APPLICANT: Huber-Lang, Markus
APPLICANT: Sarma, Vidya
APPLICANT: Czermak, Boris
TITLE OF INVENTION: Compositions and Methods for the Treatment of Sepsis
FILE REFERENCE: UM-03783
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CURRENT APPLICATION NUMBER: US/09/878,603
CURRENT FILING DATE: 2001-06-11
PRIOR APPLICATION NUMBER: 09/387,671
PRIOR FILING DATE: 1999-08-31
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SOFTWARE: PatentIn Ver. 2.0
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CURRENT APPLICATION NUMBER: US/09/878,603
CURRENT FILING DATE: 2001-06-11
PRIOR APPLICATION NUMBER: 09/87,671
PRIOR FILING DATE: 1999-08-31
                                                                                                                                                                                                                                                                                                                                                                                                                                                           OTHER INFORMATION: Description of Artificial Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURE:
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ORGANISM: Artificial Sequence
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95.0%;
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Pred. No. 9e-10;
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; OTHER INFORMATION: Description of Artificial Sequence:
US-09-878-603-70
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; Sequence 70, Application US/09878603

; Patent No. US20020165138A1
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APPLICANT: Ward, Peter A.
APPLICANT: Huber-Lang, M
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                                                                                                                                                                                                                                                                                                 Sequence 71, Application UPatent No. US20020165138A1
                                   SEQ ID NO 71
                                                       APPLICANT: Czermak, Boris

TITLE OF INVENTION: Compositions and Methods for the Treatment of Sepsis

FILE REFERENCE: UM-03783

CURRENT APPLICATION NUMBER: US/09/878,603

CURRENT FILING DATE: 2001-06-11

PRIOR APPLICATION NUMBER: 09/387,671

PRIOR FILING DATE: 1999-08-31

NUMBER OF SEQ ID NOS: 74

NUMBER OF SEQ ID NOS: 74
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                                                   SOFTWARE: PatentIn Ver. 2.0
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SOFTWARE: PatentIn Ver. 2
SEQ ID NO 69
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CURRENT FILING DATE: 2001-06-11
PRIOR APPLICATION NUMBER: 09/87,671
PRIOR FILING DATE: 1999-08-31
NUMBER OF SEQ ID NOS: 74
SOFTWARE: Patentin Ver. 2.0
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LENGTH: 20
TYPE: PRT
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TITLE OF INVENTION: Compositions and Methods for the Treatment of Sepsis
FILE REFERENCE: UM-03783
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APPLICANT: Huber-Lang, Markus
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TYPE: PRT
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95.0%;
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Pred. No. 9e-10;
0; Mismatches
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US-09-878-603-54
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US-09-878-603-54
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; OTHER INFORMATION: Description of Artificial Sequence:
US-09-878-603-73
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; Sequence 73, Application US/09878603

; Patent No. US20020165138A1
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                                                                                                SOFTWARE: PatentIn Ver. 2.0 SEQ ID NO 54
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                                                                                                                                                                                                                                                                                                                                                        Sequence 54, Application US/09878603
Patent No. US20020165138A1
                                                                                                                              APPLICANT: Czermak, Boris
TITLE OF INVENTION: Compositions and Methods for the Treatment of Sepsis
FILE REFERENCE: UM-03783
CURRENT FILING DATE: 2001-06-11
PRIOR APPLICATION NUMBER: 09/387,671
PRIOR APPLICATION NUMBER: 09/387,671
NUMBER OF SEQ ID NOS: 74
NUMBER OF SEQ ID NOS: 74
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CURRENT FILING DATE: 2001-06-11
PRIOR APPLICATION NUMBER: 09/387,671
PRIOR FILING DATE: 1999-08-31
NUMBER OF SEQ ID NOS: 74
SOFTMARE: Patentin Ver. 2.0
SEQ ID NO 73
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APPLICANT: Crerry, Vidya
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                                                                      LENGTH: 19
TYPE: PRT
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     OTHER INFORMATION: Description of Artificial Sequence:
                                ORGANISM: Artificial Sequence FEATURE:
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TITLE OF INVENTION: Compositions and Methods for the Treatment of Sepsis
FILE REFERENCE: UM-03783
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Sarma, Vidya
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Pred. No. 9e-10;
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LENGTH: 20
TYPE: PRT
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               Matches
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                                          Query Match
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                                                                                                                                                                                                                                                                                                                                                                                                Sequence 65, Application UPatent No. US20020165138A1
                                                                                                                                                                                                 PRIOR APPLICATION NUMBER: 09/387,671 PRIOR FILING DATE: 1999-08-31 NUMBER OF SEQ ID NOS: 74
                                                                                                                                                                                                                                                                                                                            APPLICANT: Ward, Peter A.
APPLICANT: Huber-Lang, Markus
APPLICANT: Sarma, Vidya
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                                                                                                                                                                                                                                              CURRENT APPLICATION NUMBER: US/09/878,603
CURRENT FILING DATE: 2001-06-11
                                                                                                                                                                                                                                                                                  APPLICANT: Czermak, Boris
TITLE OF INVENTION: Compositions and Methods for the Treatment of Sepsis
FILE REFERENCE: UM-03783
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                                                                                                                                                                                       SOFTWARE: PatentIn Ver.
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Best Local Similarity
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NUMBER OF SEQ ID NOS: 74
SOFTWARE: Patentin Ver. 2.0
                                                                                                               ORGANISM: Artificial Sequence
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PRIOR APPLICATION NUMBER: 09/387,671
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CURRENT FILING DATE: 2001-06-11
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TITLE OF INVENTION: Compositions and Methods for the Treatment of Sepsis
FILE REFERENCE: UM-03783
                                                                               OTHER INFORMATION: Description of Artificial Sequence:
                                                                                                          FEATURE:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: Ward, Peter A. APPLICANT: Huber-Lang, M
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LENGTH: 20
TYPE: PRT
ORGANISM: Artificial Sequence
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                           Local Similarity
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Sarma, Vidya
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           Conservative
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                       94.78;
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                    Score 108; DB 9;
Pred. No. 1.8e-09;
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      Mismatches
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                                   Length 20;
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1 CCYDGASVNNDETCEQRAAR 20

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RESULT 13
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US-09-878-603-55
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US-09-878-603-72
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APPLICANT: Ward, Peter A.
APPLICANT: Huber-Lang, Markus
APPLICANT: Sarma, Vidya
APPLICANT: Serma, Vidya
APPLICANT: Czermak, Boris
TITLE OF INVENTION: Compositions and Methods for the Treatment of Sepsis
FILE REFERENCE: UM-03783
                                                                                                                                                       Matches
                                                                                                                                                                                              Query Match
                                                                                                                                                                                                                                                                                                                                                    SEQ ID NO 55
LENGTH: 18
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Best Local Similarity 90.0
Matches 18; Conservative
                                                                                                                                                                          Best Local Similarity
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Patent No. US20020165138A1
GENERAL INFORMATION:
APPLICANT: Ward, Peter A.
                                                                                                                                                                                                                                                                                                                                                                                             CURRENT APPLICATION NUMBER: US/09/878,603
CURRENT FILING DATE: 2001-06-11
PRIOR APPLICATION NUMBER: 09/387,671
PRIOR FILING DATE: 1999-08-31
NUMBER OF SEQ ID NOS: 74
SOFTWARE: Patentin Ver. 2.0
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APPLICANT: Sarma, Vidya
APPLICANT: Sarma, Vidya
APPLICANT: Czermak, Boris
TITLE OF INVENTION: Compositions and Methods for the Treatment of Sepsis
FILE REFERENCE: UM-03783
CURRENT APPLICATION NUMBER: US/09/878,603
CURRENT FILING DATE: 2001-06-11
PRIOR APPLICATION NUMBER: 09/387,671
PRIOR APPLICATION NUMBER: 09/387,671
PRIOR FILING DATE: 1999-08-31
NUMBER OF SEO ID NOS: 74
                                                                                                                                                                                                                                                        OTHER INFORMATION: Description of Artificial Sequence:
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ORGANISM: Artificial Sequence
                                                                                                       1 CCYDGASVNNDETCEQRA 18
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                                                              CCYDGASVNNDETCEQRA 18
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                                                                                                                                                                       92.1%;
100.0%;
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                                                                                      Query Match
Best Local Similarity
Matches 18; Conserv
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LENGTH: 20
TYPE: PRT
ORGANISM: Artificial Sequence
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Patent No. US20020165138A1
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Best Local :
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Patent No. US20020165138A1
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                                                                                                                                                                                                                                                                                                                          CURRENT APPLICATION NUMBER: US/09/878,603
CURRENT FILING DATE: 2001-06-11
PRIOR APPLICATION NUMBER: 09/387,671
PRIOR FILING DATE: 1999-08-31
NUMBER OF SEQ ID NOS: 74
SOFTWARE: Patentin Ver. 2.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: Huber-Lang, Markus
APPLICANT: Sarma, Vidya
APPLICANT: Czermak Boris
TITLE OF INVENTION: Compositions and Methods for the Treatment of Sepsis
FILE REFERENCE: UM-03783
CURRENT APPLICATION NUMBER: US/09/878,603
CURRENT FILING DATE: 2001-06-11
PRIOR APPLICATION NUMBER: 09/387,671
PRIOR APPLICATION NUMBER: 09/387,671
PRIOR FILING DATE: 1999-08-31
                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: Sarma, Vidya
APPLICANT: Czermak, Boris
TITLE OF INVENTION: Compositions and Methods for the Treatment of Sepsis
FILE REFERENCE: UM-03783
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: Ward, Peter A. APPLICANT: Huber-Lang, Markus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT: Ward, Peter A. APPLICANT: Huber-Lang, M
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NUMBER OF SEQ ID NOS: 74
                                                                                                                                                                               FEATURE: OTHER INFORMATION: Description of Artificial Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ORGANISM: Artificial Sequence
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TYPE: PRT
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                                             1 CCYDGASVNNDETCEQRAAR 20
1 CCYQGASVNNQETCEQRAAR 20
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                                                                                        Conservative
                                                                                                           89.5%;
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                                                                                    Score 102; DB 9; Length 20; Pred. No. 1.3e-08; O; Mismatches 2; Indels
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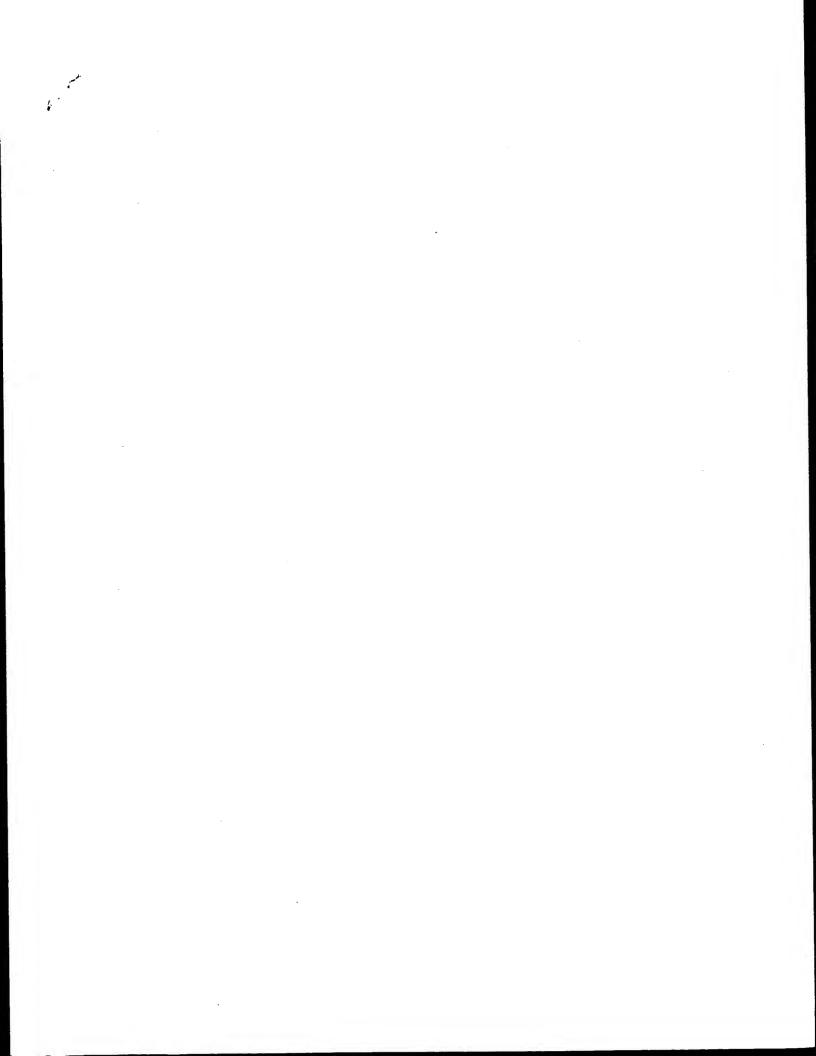
; Sequence 56, Application US/09878603
; Patent No. US20020165138A1

GENERAL INFORMATION:

RESULT 15 US-09-878-603-56

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APPLICANT: Huber-Lang, Markus
APPLICANT: Sarma, Vidya
APPLICANT: Czermak, Boris
TITLE OF INVENITON. Compositions and Methods for the Treatment of Sepsis
FILE REFERENCE: UM-03783
CURRENT APPLICATION NUMBER: US/09/878,603
CURRENT FILING DATE: 2001-06-11
PRIOR APPLICATION NUMBER: 09/387,671
PRIOR APPLICATION NUMBER: 09/387,671
PRIOR FILLING DATE: 1999-08-31
SOFTWARE: Patentin Ver. 2.0
SED ID NO 5: 74
SOFTWARE: PATENTICIAL Sequence
FEATURE:
ORGANISM: Artificial Sequence
FEATURE:
ORGANISM: Artificial Sequence
FEATURE:
ORGANISM: Artificial Sequence
FEATURE:
OPER INFORMATION: Description of Artificial Sequence: Synthetic
US-09-878-603-56

Query Match
Best Local Similarity 100.0%; Pred. No. 1.6e-08;
Matches 17; Conservative 0; Mismatches 0; Indels 0; Gaps
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Db 1 CCYDGASVNNDETCEQR 17
Search completed: May 1, 2003, 22:35:14
Job time: 45 secs
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Minimum
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Listing first 45 summaries
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GenCore version 5.1.4_p5_4578 Copyright (c) 1993 - 2003 Compugen Ltd.
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/cgn2_6/ptodata/1/iaa/5B_COMB.pep:*
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US-08-480-750-13
US-08-41-502B-31
US-08-417-383-32
US-08-487-750-32
US-08-480-750-32
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US-08-464-000-49	US-08-461-939B-49	US-08-175-069A-49	US-08-290-448A-49	US-08-290-448A-49	US-08-335-303-20	US-09-136-769A-26	US-09-136-769A-18	US-09-136-769A-7	US-08-407-207A-6	US-08-461-384B-9	US-08-421-695A-32	US-08-421-698A-79	US-08-421-697A-79	US-08-421-696A-79	US-08-303-052A-32	US-08-421-702A-79	US-08-480-750-31
Sequence 49,	Sequence 49,	Sequence 49,	Sequence 49,	Sequence 49,	Sequence 20,	Sequence 26,	Sequence 18,	Sequence 7, 1	Sequence 6, 1	Sequence 9, i	Sequence 32,	Sequence 79,	Sequence 79,	Sequence 79,	•	Sequence 79,	Sequence 31,
Appl	Appl	Appl	Appl	Appl	Appl	Appl	Appl	Appli	Appli	Appli	Appl	Appl	Appl	Appl	Appl	Appl	Appl

## ALIGNMENTS

RESULT 1

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ATTORNEY/AGENT INFORMATION:

NAME: Ihnen, Jeffrey L.

REGISTRATION NUMBER: 28,957

REFERENCE/DOCKET NUMBER: 24260-104763

TELECOMMUNICATION INFORMATION:

TELEPHONE: 202-962-4810

TELEPAX: 202-962-8300

INFORMATION FOR SEQ ID NO: 14:

SEQUENCE CHARACTERISTICS:

LENGTH: 16 amino acids

TYPE: amino acid

TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 14, Application Patent No. 5514774; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-08-137-800-14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC COMPATIBLE
OPERATING SYSTEM: PC-DOS/MS
SOFTWARE: Wordberfect 5.1
CURRENT APPLICATION DATA:
                                                                                                                                                      MOLECULE TYPE:
HYPOTHETICAL: N
ANTI-SENSE: NO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT: Cruz, Lourdes J.
APPLICANT: Hillyard, David R.
APPLICANT: McIntosh, J. Michael
APPLICANT: Santos, American
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT:
APPLICANT:
NAME/KEY: Modified-site LOCATION: 6..14
OTHER INFORMATION: /note=OTHER INFORMATION: Hydrox
OTHER INFORMATION: Xaa(14
                                                                                                                                      ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT: Santos, Ameurfina D. TITLE OF INVENTION: Conotoxin Peptides NUMBER OF SEQUENCES: 53
                                                                                                FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ADDRESSEE: Venabl
STREET: 1201 New
CITY: Washington
STATE: DC
ZIP: 20005
                                                                                                                    ORGANISM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICATION NUMBER: FILING DATE: 19-OCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                 CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1, Application US/08137800 5514774
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                                                                                                                                                            NO
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                                                                                                                    Conus bandanus
                                                                                                                                                                        . peptide
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19-OCT-1993
  Hydroxy-Pro;
Xaa(14) is A
                  /note= "Xaa(6) is Pro or
Hydroxy-Pro; Xaa(13) is Pro or Hydroxy-Pro;
is Asp or beta-carboxyaspartate"
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RESULT 2
US-08-477-383-14
; Sequence 14, Application US/08477383
; Patent No. 5589340
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Best Local Similarity
Matches 6; Conserva
                                                                                                                                                                                                               TOPOLOGY: 11near MOLECULE TYPE: pep
                                                                                                                                                                                                                                                                                                                         NFORMATION FOR SEQ ID NO:
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                                                                                  FEATURE:
                                                                                                                                                                         FEATURE:
                                                                                                                                                                                                  HYPOTHETICAL: NO ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                           SEQUENCE CHARACTERISTICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ZIP: 20005
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                 TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/137,800
FILING DATE: 19-OCT-1993
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CORRESPONDENCE ADDRESS:
ADDRESSEE: Venable, Baetjer, Howard & Civiletti
STREET: 1201 New York Avenue, N.W., Suite 1000
                                                                                                                                                                                                                                                                                                                                                                                                                             ATTORNEY/AGENT INFORMATION:
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APPLICANT: Cruz, Lourdes J.
APPLICANT: Hillyard, David R.
                                                                                                           OTHER INFORMATION: OTHER INFORMATION:
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                                                                                                                                         NAME/KEY: Modified-site LOCATION: 6..14
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                    OTHER INFORMATION: OTHER INFORMATION:
                                                   LOCATION:
                                                                 NAME/KEY:
                                                                                             OTHER INFORMATION:
                                                                                                                                                                                      ORGANISM:
                                                                                                                                                                                                                                                                                                                         TELEPHONE: 202-962-8300
                                                                                                                                                                                                                                                              STRANDEDNESS
                                                                                                                                                                                                                                                                                                                                                                              NAME: Ihnen, Jeffrey L.
REGISTRATION NUMBER: 28,957
REFERENCE/DOCKET NUMBER: 24
                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICATION NUMBER: US 08/084,848 FILING DATE: 29-JUN-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICATION NUMBER: US/08/477,383
FILING DATE: 07-JUN-1995
                                                                                                                                                                                                                                                                                          LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CITY: Washington
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                                                                                                                                                                                                                                                                          amino acid
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                                                               Modified-site
                                                                                                                                                                                   Conus bandanus
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                                                                                                                                                                                                                                peptide
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                 /note= "The C-terminus is
preferably amidated."
                                                                                    /note= "Xaa(6) is Pro or
Hydroxy-Pro; Xaa(13) is Pro or Hydroxy-Pro; Xaa(14) is Asp
beta-carboxyaspartate."
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42.9%;
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Pred. No.
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                                                                      FEATURE:
                                                                                                                                                                                      MOLECULE TYPE:
HYPOTHETICAL: N
ORIGINAL SOURCE:
                                                                                                                                                          FEATURE:
                                                                             LOCATION: 6..14
OTHER INFORMATION:
OTHER INFORMATION:
OTHER INFORMATION:
                                                                                                                                                                                                                                                                          SEQUENCE CHARACTERISTICS
LENGTH: 16 amino acids
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APPLICANT:
APPLICANT:
                                                                                                                           NAME/KEY:
LOCATION:
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      OTHER INFORMATION: OTHER INFORMATION:
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                                                   NAME/KEY:
                                                                                                                                                                        ORGANISM:
                                                                                                                                                                                                                                  TOPOLOGY:
                                                                                                                                                                                                                                            STRANDEDNESS:
                                                                                                                                                                                                                                                              TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                     TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CLASSIFICATION:
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                                                                                                                                                                                                                  peptide
/note= "The C-terminus is
preferably amidated."
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Query Match
Best Local Similarity 42.9
Matches 6; Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/137,800
FILING DATE: 19-0CT-1993
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/084,848
FILING DATE: 29-JUN-1993
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MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
COMPUTER: IBM PC COMPOSITION OF THE PROPERTY OF T
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CURRENT APPLICATION DATA:
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ADDRESSEE: Venable, Baetjer, Howard & Civiletti
STREET: 1201 New York Avenue, N.W., Suite 1000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NAME: Ihnen, Jeffrey L.
REGISTRATION NUMBER: 28,957
REFERENCE/DOCKET NUMBER: 24260-107673
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               16 amino acids
Modified-site
                                                                                                                                                                                                                                                                                                          Modified-site
                                                                                                                                                                                                                                                                                                                                                                                                          Conus bandanus
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Macintosh, J. Michael
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              07-JUN-1995
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                                                                     /note= "Xaa(6) is Pro or
Hydroxy-Pro; Xaa(13) is Pro or Hydroxy-Pro; Xaa(14) is
beta-carboxyaspartate."
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TELEFAX: 202-962-8300
INFORMATION FOR SEQ ID NO: 14:
SEQUENCE CHARACTERISTICS:
LENGTH: 16 amino acids
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STRTE: Washington
STATE: DC
COUNTRY: U.S.A.
ZIP: 2005
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                                                                                                                               FEATURE:
                                                                                                                                                                                                                                                                                                                                      MOLECULE TYPE: po
HYPOTHETICAL: NO
ORIGINAL SOURCE:
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APPLICATION NUMBER: US 08/137,800
FILING DATE: 19-OCT-1993
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/084,848
FILING DATE: 3-7771-100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SOFTWARE: Patentin Release #1.0, Version #1.30 CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/480,750 FILING DATE: 07-JUN-1995 CLASSIFICATION: 530
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                       FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CORRESPONDENCE ADDRESS:
ADDRESSEE: Venable, Baetjer, Howard & Civiletti
STREET: 1201 New York Avenue, N.W., Suite 1000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITLE OF INVENTION: Conotoxin Peptides NUMBER OF SEQUENCES: 59
                   OTHER INFORMATION: OTHER INFORMATION:
                                                                                                                                                                              OTHER INFORMATION: OTHER INFORMATION:
                                                                          LOCATION:
                                                                                                                                                     OTHER INFORMATION:
                                                                                                                                                                                                                                   LOCATION:
                                                                                                   NAME/KEY:
                                                                                                                                                                                                                                                         NAME/KEY: Modified-site
                                                                                                                                                                                                                                                                                                                ORGANISM:
                                                                                                                                                                                                                                                                                                                                                                                                                          TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                             STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS
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Local Similarity 42.9%;
les 6; Conservation
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                      amino acid
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Santos, Ameurfino S.
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Macintosh, J. Michael
                                                                                                Modified-site
                                                                                                                                                                                                                                                                                                                Conus bandanus
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                                                                                                                                                                                                                                                                                                                                                                                                                       linear
                                                                                                                                                                                                                                                                                                                                                                                      peptide
                preferably amidated
                                                                                                                               /note= "Xaa(6) is Pro or
Hydroxy-Pro; Xaa(13) is Pro or Hydroxy-Pro; Xaa(14) is Asp or
beta-carboxyaspartate."
                        /note- "The C-terminus is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          24260-107673
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Pred. No. 26;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 32,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Best Local Similarity 50.0 Matches 5; Conservative
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TELEFAX: 202-962-8300 INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Patent No. 645504
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APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
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TYPE: PRT
                                               REFERENCE/DOCKET NUMBER: 24
TELECOMMUNICATION INFORMATION:
TELEPHONE: 202-962-4810
                                                                                                                 FILING CLASSIFICATION: CLASSIFICATION: ATTORNEY/AGENT INFORMATION: Then, Jeffrey L. Then, J
                                                                                                                                                                                                                                                                                     COMPUTER: IBM PC compatib
OPERATING SYSTEM: PC-DOS/1
SOFTWARE: WordPerfect 5.1
CURRENT APPLICATION DATA:
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                                                                                                                                                                                                                                                                                                                                                                                                 COMPUTER READABLE FORM: MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                     STATE: LC
TELEPHONE: 202-962-8300
                                                                                                                                                                                                                                     APPLICATION NUMBER: US/08/137,800 FILING DATE: 19-OCT-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CITY: Washington
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ADDRESSEE: Venable, Baetjer, Howard & Civiletti STREET: 1201 New York Avenue N.W., Suite 1000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Jocal Similarity 42.9%; les 6; Conservation
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Santos, Ameurfina D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Cruz, Lourdes J.
                                                                                                                                                                                                                                                                                                                                         E: Floppy disk
IBM PC compatible
SYSTEM: PC-DOS/MS-DOS
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                                                                                                         24260-104763
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APPLICANT: Dunbar, Bonita S.
TITLE OF INVENTION: IMMUNOGENIC EPITOPES OF THE HUMAN ZONA PELLUCIDA PROTEIN FILE REFERENCE: 12231.2USU1
CURRENT APPLICATION NUMBER: US/09/441,502B
CURRENT FILING DATE: 1999-11-17
NUMBER OF SEQ ID NOS: 104
NUMBER OF SEQ ID NOS: 104
SOFTWARE: Patentin version 3.1
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                       Score 35; DB 4; Length 19, Pred. No. 31;
  4; Indels
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US-08-477-383-32
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                                                                                                                                                APPLICATION NUMBER: US 08/137,800
FILING DATE: 19-OCT-1993
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/084,848
FILING DATE: 29-JUN-1993
ATTORNEY/AGENT INFORMATION:
NAME: Ihnen, Jeffrey L.
REGISTRATION NUMBER: 28,957
REFERENCE/DOCKET NUMBER: 24,260-107673
TELECOMMUNICATION INFORMATION:
TELEPHONE: 202-962-4810
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Matches 7; Conserva
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                                                                                                                        TELEFAX: 202-96 INFORMATION FOR SEQ
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                                                                                                    SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                               CLASSIFICATION: 435
CLASSIFICATION DATA:
PRIOR APPLICATION DATA:
US_08/137,800
                                                                                                                                                                                                                                                                                                                                                                                                      COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
   HYPOTHETICAL:
                     MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CORRESPONDENCE ADDRESS:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT:
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LENGTH: 18 amino acids
TYPE: amino acid
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                                                   STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STREET: 1201 New CITY: Washington
                                        TOPOLOGY:
                                                                                      LENGTH:
                                                                                                                                                                                                                                                                                                                                                                         APPLICATION NUMBER: US/01 FILING DATE: 07-JUN-1995
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ZIP: 20005
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OTHER INFORMATION: /note= "xaa is Pro or Hydroxy-Pro"
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                                                                   amino acid
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                                                                                      18 amino acids
                                                                                                                                         202-962-8300
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1201 New York Avenue, N.W., Suite 1000
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NO
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Pred. No. 35;
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Query Match
Best Local Similarity
Thes 7; Conserva
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US-08-487-174-32
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                                                                                                                                                  REFERENCE/DOCKET NUMBER: 24
TELECOMMUNICATION INFORMATION:
TELEPHONE: 202-962-4810
TELEFAX: 202-962-8300
INFORMATION FOR SEQ ID NO: 32:
                                                                                                                                                                                                                                                                 PRIOR APPLICATION DATA:

APPLICATION NUMBER: US 08/137,800

FILING DATE: 19-OCT-1993

PRIOR APPLICATION DATA:

APPLICATION NUMBER: US 08/084,848

FILING DATE: 29-JUN-1993

ATTORNEY/AGENT INFORMATION:
MOLECULE TYPE: per
HYPOTHETICAL: NO
ORIGINAL SOURCE:
ORGANISM: Conus
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                                                                                                                  SEQUENCE CHARACTERISTICS:
LENGTH: 18 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDIIM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0,
CURRENT APPLICATION DATA:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT: Macintosh, J. Michael APPLICANT: Santos, Ameurfino S. TITLE OF INVENTION: Conotoxin Pe
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CORRESPONDENCE ADDRESS:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT:
                                                                                  STRANDEDNESS:
                                                                                                  TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                         APPLICATION NUMBER: FILING DATE: 07-JUN
                                                                   TOPOLOGY:
                                                                                                                                                                                                                                       NAME: Ihnen, Jeffrey L
REGISTRATION NUMBER: 21
                                                                                                                                                                                                                                                                                                                                                                                           CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STREET:
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OTHER INFORMATION: /note= "Xaa is Pro or Hydroxy-Pro."
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1201 New York Avenue, N.W., Suite 1000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Cruz, Lourdes J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               U.S.A.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                         PatentIn Release #1.0, Version #1.30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Olivera, Baldomero M.
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 Conus ermineus
                                                                   linear
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                                               peptide
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07-JUN-1995
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preferably amidated."
                                                                                                                                                                                                                                     28,957
                                                                                                                                                                                                                       24260-107673
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Pred. No. 35
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                                                                                                                                                                                                                           ATTORNEY/AGENT INFORMATION:
NAME: Ihnen, Jeffrey L.
REGISTRATION UNMBER: 28,957
REFERENCE/DOCKET NUMBER: 2426
TELECOMMUNICATION INFORMATION:
TELEPHONE: 202-962-810
                                                                                                                                                                   TELEFAX: 202-962-8300
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CORRESPONDENCE ADDRESS:
ADDRESSEE: Venable, Baetjer, Howard & Civiletti
STREET: 1201 New York Avenue, N.W., Suite 1000
                                                  HYPOTHETICAL: NO ORIGINAL SOURCE:
                                                                 MOLECULE TYPE: pe
                                                                                                                                                                                                                                                                                                                                                                        APPLICATION NUMBER: US 08/137,800 FILING DATE: 19-OCT-1993 PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                          CLASSIFICATION: 530 PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                               SOFTWARE: PatentIn Release #1.0, Version #1.30 CURRENT APPLICATION DATA: APPLICATION NUMBER: US/08/480,750 FILING DATE: 07-UN-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT: Olivera, Baldome APPLICANT: Cruz, Lourdes J. APPLICANT: Hillyard, David
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: Santos, Ameurfino S.
TITLE OF INVENTION: Conotoxin Peptides
NUMBER OF SEQUENCES: 59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FEATURE:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
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OTHER INFORMATION: /note= "The C-terminu:
OTHER INFORMATION: preferably amidated."
                                                                                                                                                                                         TELEPHONE: 202-962-8300
                                 ORGANISM:
                                                                                                                     STRANDEDNESS:
                                                                                                                                       TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                       APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CITY: Washington
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NAME/KEY:
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                                                                                                                                                        18 amino acids
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Macintosh, J. Michael
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                                                                                                    linear
                               Conus ermineus
                                                                                   peptide
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; NAME/KEY: Modified-site;
; LOCATION: 18;
; OTHER INFORMATION: /note= "The C-terminus;
; OTHER INFORMATION: preferably amidated."
US-08-480-750-32
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Best Local Similarity
"~+~hes 7; Conserv:
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                                                                                                                                                                                 TELEFAX: 617-494-1828
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
LENGTH: 15 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GENERAL INFORMATION:
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TELEPHONE: 617-494-0400
TELEFAX: 617-494-1828
                                                                                                                                                                                                                                                                                                                                                                                                                                       SOFTWARE: Patentin Release #1.0, Version #1.30 CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/975,040
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMPUTER READABLE FORM:
MEDIUM TYPE: FLOPBY disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                 MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                     APPLICATION NUMBER: US/0 FILING DATE: 22-FEB-1996 ATTORNEY/AGENT INFORMATION:
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FEATURE:
                                                                                                   FEATURE:
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              OTHER INFORMATION:
OTHER INFORMATION:
OTHER INFORMATION:
                                                                                                                                               LENGTH: 15 amino acids
TYPE: amino acid
STRANDEDNESS: single
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CITY: CAMBRIDGE
                                                                 LOCATION
                                                                                                                                     TOPOLOGY:
                                                                                                                                                                                                                                                                                                       REGISTRATION NUMBER:
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ZIP: 02139
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                                                                               NAME/KEY: Modified-site
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LU, XIAODE
                                                                                                                                     linear
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            /product= "phosphotyrosine"
/label= pTyr
/note= "phosphorylated tyrosine"
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Pred. No. 35;
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RESULT 11
US-08-392-646-18
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Patent No. 5710129
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                                                                                                                                                                                                              TELEPHONE: 617-494-0400
TELEFAX: 617-494-0208
INFORMATION FOR SEQ ID NO: 1
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                                                                                                                                                                SEQUENCE CHARACTERISTICS:
LENGTH: 19 amino acids
TYPE: amino acid
                                                                                                                                                                                                                                                   REGISTRATION NUMBER: 31,235
REFERENCE/DOCKET NUMBER: ARIAD 337
TELECOMMUNICATION INFORMATION:
FEATURE:
                                                                                                      FRAGMENT TYPE:
                                                                                                                     MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                           SOFTWARE: PatentIn Release #1.0, Version #1.30 CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                   ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                             COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CORRESPONDENCE ADDRESS
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT: LYNCH, Berkley A. APPLICANT: WEIGELE, Manfred
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STREET: L.
BOSTON
Massar
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NUMBER OF SEQUENCES:
            OTHER INFORMATION:
OTHER INFORMATION:
                                        OTHER INFORMATION:
                                                           LOCATION:
                                                                    NAME/KEY: Modified-site
                                                                                                                                                STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                  APPLICATION NUMBER: FILING DATE: 23-FEI CLASSIFICATION: 56
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                                                                                                                                      TOPOLOGY:
                                                                                                                                                                                                                                                                                                   NAME: BERSTEIN, David L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Local Similarity 53.
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LOCATION:
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53.8%;
   /note= "phosphorylated tyrosine"
                        /product= "phosphotyrosine"
/label= YPO4
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/label= NH2
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/label= pTyr
/note= "phosphorylated tyrosine"
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/label= Ac
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Pred. No.
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RESULT 12
US-08-975-040-2
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                                                                                                                                                                                                                                          REGISTRATION NUMBER: 31,235
REFERENCE/DOCKET NUMBER: ARIAD 347F
TELECOMMUNICATION INFORMATION:
TELEPHONE: 617-494-0400
TELEFAX: 617-494-1828
INFORMATION FOR SEQ ID NO: 2:
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APPLICATION NUMBER: US/08/
FILING DATE: 22-FEB-1996
ATTORNEY/AGENT INFORMATION:
NAME: BERSTEIN, DAVID L.
REGISTRATION NUMBER: 31,23
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                                   FEATURE:
                                                                                                                                                                                         SEQUENCE CHARACTERISTICS:
LENGTH: 19 amino acids
TYPE: amino acid
                                                                                                                                               MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ZIP: 02139

COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
                                                                                                                                 FEATURE:
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APPLICANT:
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NUMBER OF SEQUENCES: 25
                                                                                              NAME/KEY:
LOCATION:
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OTHER INFORMATION:
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                                                                                                                                                                                                                                                                                                                                                                                                                          CLASSIFICATION:
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CITY: CAMBRIDGE
STATE: MA
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LOCATION:
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ZOLLER, MARK
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53.8%;
                                          /note= "phosphorylated tyrosine"
                                                            /product= "phosphotyrosine"
/label= pTyr
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/label= YPO4
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Pred. No.
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US-08-975-040-19
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                                                                            TELEFAX: 617-494-1828
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Patent No.
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 MOLECULE TYPE: FRAGMENT TYPE:
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                                                                                                                   TELECOMMUNICATION INFORMATION: TELEPHONE: 617-494-0400
                                                                                                                                                                             PRIOR APPLICATION DATA:
APPLICATION NUMBER: US/08/605,578
FILING DATE: 22-FEB-1996
ATTORNEY/AGENT INFORMATION:
NAME: BERSTEIN, DAVID L.
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MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                 CURRENT APPLICATION DATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITLE OF INVENTION: MACHINE READABLE STORAGE MEDIUM RELATING NUMBER OF SEQUENCES: 25
CORRESPONDENCE ADDRESS:
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                                       STRANDEDNESS:
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                                                                                                                                                           NAME: BERSTEIN, DAVID REGISTRATION NUMBER: 3
                            TOPOLOGY:
                                                                                                                                               REFERENCE/DOCKET NUMBER: 31,235
                                                                                                                                                                                                                                                                                                                                                                                         STATE: MA
                                                                  LENGTH:
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                                                                                                                                                                                                                                                          FILING DATE:
                                                                                                                                                                                                                                                                    APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                SOFTWARE:
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OPERATING SYSTEM: PC-DOS/MS-DOS
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                                              amino acids
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                            linear
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HOLT, DENNIS
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/label= pTyr
/note= "phosphorylated tyrosine"
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/label= NH2
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/label= Ac
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Pred. No. 44;
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Sequence 19, Application US/09101927
Patent No. 6303319
GENERAL INFORMATION:
APPLICANT: Rickles, Richard J
TITLE OF INVENTION: Cell-Based Assay
FILE REFERENCE: 336A PCT/US
CURRENT APPLICATION NUMBER: US/09/101,927
CURRENT FILING DATE: 1998-07-15
EARLIER APPLICATION NUMBER: PCT/US97/026735
                                                                                                                                                 RESULT 15
US-09-101-927-19
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NAME/KEY: MOD_RES
LOCATION: (15)
OTHER INFORMATION: PHOSPHORYLATION
US-09-101-927-17
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US-09-101-927-17
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SEQ ID NO 17
LENGTH: 19
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                                                                                                                                                                                                                                                                                                          Query Match
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TITLE OF INVENTION: Cell-Based Assay
FILE REFERENCE: 335A PCT/US
CURRENT APPLICATION NUMBER: US/09/101,927
CURRENT FILING DATE: 1998-07-15
EARLIER APPLICATION NUMBER: PCT/US97/026735
EARLIER FILING DATE: 1997-02-21
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                                                                                                                                                                                                                                                                                                                                                                                                                                             ORGANISM: Homo sapiens FEATURE: NAME/KEY: MOD_RES
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/label= ypo4
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/label= YPO4
                                                                                                                                                                                                                                                                                 Score 34; DB 4; Length 19; Pred. No. 44;
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Pred. No.
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